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The Best of Both Shores

ALLSTATE, AVON AND GXS are among several Fortune 500 companies that are slashing labor costs while retaining control over IT staffs and project quality through offshore insourcing. Tasos Tsolakis at GXS (above) estimates that he has saved \$16 million a year

OUTSOURCING WATCH 2003 under this emerging model by shifting work to offshore employees. **PAGE 37**

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Users Back Novell Plan for NetWare-to-Linux Path

NetWare 7 release will put services on both OS kernels as means of providing migration option

ONE ON ONE

Now NetWare users know

CEO Jack Messman says:

QuickLink 37798

IT Managers Ready to Start Storage Virtualization Push

they won't "get stuck,"

BY DON TENNANT SALT LAKE CITY

With the announcement last week that Novell Inc. has

week that Novell Inc. has tapped Linux as the migration path for NetWare,

path for Netware, users said they finally have reason to believe that the folks in Novell's executive suite are as savvy as its engineers.

At its BrainShare 2003 user and partner conference here, Novell announced that Net-Ware 7 will be a set of services sitting on top of both the Net-Ware and Linux kernels. Net-

Savings eyed as top

data-pooling tools

BY LUCAS MEARIAN

vendors begin to offer

With major vendors starting

to offer storage virtualization

technology, many IT managers

at last week's Storage Net-

working World conference

here said they're ready to be-

gin testing the waters in hopes

of increasing their storage ca-

pacity utilization rates and au-

For example, Lynn Neal, a

senior systems integrator at

Sprint Corp., said she's push-

ing the idea of virtualization

tomating more operations.

Ware 7 is due to succeed Net-Ware 6.5, which entered public beta-testing last week.

"We are not dropping Net-Ware; we are adding Linux,"

said Jack Messman, Novell's chairman and CEO, in a keynote speech to BrainShare attendees. "This is not a departure from Net-Ware. We will not

abandon you, and you need not abandon us."

That's just what many Net-Ware users wanted to hear.

"The way they're migrating the operating system — going

to a modular format — makes a lot of sense," said Michael Gardner, a senior systems engineer at Munder Capital Management, a financial services firm in Bloomfield Hills, Mich. NetWare "has always stood there as one of the more

NetWare, page 14

Slow Uptake For Windows Server 2003

Users see benefits, but many have just upgraded to Win 2k

BY CAROL SLIWA

Few corporate IT departments are expected to race to adopt the long-delayed Windows Server 2003 operating system that Microsoft Corp. will launch this week.

Several IT managers contacted last week by Computerworld said they have no plans to migrate to the new operating system this year — especially those who have recently finished or are in the process of completing a move to Windows 2000 Server.

"We tend to lag behind on upgrades. It allows a shake-in period and means less risk," said Bob Farrugia, director of application delivery at London

Windows, page 49

INSIDE

- n: SNW attendees say senior execs are making it difficult to get funding for SAN technology. Page 16
- Our takes Lean hard on your storage vendors to ensure interoperability, says editor in chief Maryfran Johnson, Page 20

to upper management because of its potential to create a more automated way of provisioning storage on the company's 160TB storage-area network.

Neal added that she's particularly interested in networkbased virtualization technology that could let users reach across a myriad of storage de-

Storage, page 16

IN THE SHADOW

Amid the hoopla, Microsoft is also launching Visual Studio .Net 2003. Page 49



Managing desktop security can be challenging.

That's why there's Windows XP and Office XP.

Recognize any of those issues? Or, perhaps, all of them? We thought so. Many of these issues can be related to your legacy desktop software; fortunately, many of them can be addressed by features in Microsoft® Windows® XP Professional

Microsoft





Wants to encrypt a memo



Wants to encrypt everything



Needs to make a VPN connection

and Microsoft Office XP Professional. Want specific examples? The Group Policy feature in Windows XP Professional lets you define related user groups and then easily assign security settings to the group as a whole. Office XP Professional

offers Macro Virus Protection, which lets you easily configure applications to help prevent users from running the macro attachments that most viruses use. Want more reasons to upgrade? Visit microsoft.com/desktop

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Beyond Compliance

In the Management section: At Blue Cross and Blue Shield of Minnesota, CIO John Ounjian (left) is creating business value while bringing IT into compliance with HIPAA regulations. Page 41

- Invensys plans to sell Baan. Singled out for its weak financial performance in February, the software vendor finds itself on the block for the second time in three years.
- 6 Lawson Software says that despite tough times, it's still committed to enhancing its product lines through development or acquisitions.
- 7 Federal IT spending could grow from \$45 billion this fiscal year to \$68 billion in 2008, a new study predicts.
- Sun CEO Scott McNealy talks about mobility while flying to Orlando on his corporate jet.
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- 12 BMC announces software aimed at IT workers who lack mainframe skills.
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TECHNOLOGY

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- 34 Future Watch: The Web's Next Leap. With the Semantic Web, the inventor of the World Wide Web hopes to infuse intelligence into his creation.
- 35 Security Manager's Journal: The Battle Against Pornography Continues. Vince Tuesday looks into automated mail filtering and is surprised to find a tool that can do the job.

MANAGEMENT

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 - Slashing labor costs while retaining control over IT staff and project quality are at the heart of offshore insourcing.
- 39 Tight Lips. Companies have typically provided as little information as possible about former employees for fear of being sued. But some hiring managers are finding ways to dig deeper into the backgrounds of job candidates.
- 40 Q&A: Facing the Unthinkable. It's time for corporate crisis management to grow up, says Ian I. Mitroff, who wrote about that subject in this month's Harvard Business Review.

- 20 Maryfran Johnson says that last week's Storage Networking World conference highlighted to two key trends: consolidation of storage resources and a move toward standardization.
- 20 Pimm Fox observes that you might get a sense of déjà vu as you venture into the field of Web services, since you probably encountered some of the challenges - and some of the players — in earlier endeavors.
- 21 Ari Kaplan stresses the importance of having solid contractual relationships with your supply chain partners.
- 36 Tommy Peterson says all the buzz about real-time applications is drowning out important practical considerations. Remember: Real-time access to data is just one factor in successful decision-making.
- 42 Bart Perkins advises that you consider the same consequences for offshore outsourcing that you would consider in making any outsourcing decision.
- 50 Frankly Speaking: Frank Hayes urges IT managers to build security into their users, not just their systems.

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Sometimes, It's not Nice to Share

SECURITY: Simply restricting file sharing and eliminating mapped drives can help keep "network-aware" worms away from your systems, says columnist Douglas Schweitzer. O QuickLink 37641

Speed Performance With **Asynchronous Database Calls**

DEVELOPMENT: Reduce the time it takes to retrieve a recordset from a large database. QuickLink a3040

How to Plan for a **System Migration**

OPERATING SYSTEMS: The first of a threepart look on how to plan for a 30,000-seat migration. QuickLink 37850

Building Blocks for a Mobile/Wireless Strategy

MOBILE/WIRELESS: XcelleNet CTO Joe Owen discusses the steps you need to take to devise a successful wireless strategy, focusing on ownership costs, security and bandwidth issues. O QuickLink 37830

Taking a Worldview of Storage

STORAGE: Pierre Baudet, business systems manager at New Balance Athletic Shoe, tells SNW Online how much you can learn about vendors when developing and installing a storage utility backbone. O QuickLink 37762

What's a QuickLink?

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O QuickLink a2420

AT DEADLINE Microsoft, U.S. File Settlement Report

Microsoft Corp. and the U.S. government said in a joint status report that the company has taken a series of steps to comply with the antitrust settlement deal approved by a federal judge in Nowember. The actions include training for about 10,000 of Microsoft's employees and the formation of an internal committee to manage compliance efforts.

Dell Retakes PC Lead, IDC Says

Dell Computer Corp. regained the lead in worldwide PC shipments from Hewlett-Packard Co. in the first quarter, capitalizing on a shift in buying from consumers to corporate users, according to IDC. Dell shipped about 8 million PCs, compared with 5.5 million for HP, IDC said. The Framingham, Mass.-based market research firm added that total shipments increased 2.1% year over year to 34.6 million PCs.

Homeland Agency Taps Privacy Chief

The U.S. Department of Homeland Security has named Nuala O'Connor Kelly as its Ilrst privacy officer. O'Connor Kelly, who will be responsible for ensuring that the technologies used by the agency don't erode the privacy of U.S. citizens, previously held a similar position at the Department of Commerce.

Short Takes

President Bush has nominated Maj. Gen. Steven Boutelle to become the U.S. ARMY'S CIO. Boutelle, who would also be promoted to lieutenant general, currently is director of information operations, networks and space for the Army. . . . Poway, Calif.-based GATEWAY INC. reported a \$197.7 million first-quarter loss on revenue of \$844.4 million. Revenue was down 20% from the year-earlier level of \$1.06 billion.

Struggling Baan Put Up for Sale – Again

Invensys seeks to divest business apps vendor

BY MARC L. SONGINI

OR the second time in three years, business applications vendor Baan Co. is on the auction block, a devel-

opment that drew mixed reactions from users and analysts last week.

Parent company Invensys PLC announced that it has put Baan up for sale as part of a plan to jettison two-thirds of its assets. Invensys, a London-based maker of manufacturing control systems and other products, bought Baan in August 2000 for \$709 million and has pumped another \$100 million into the Barneveldt, Netherlands-based software vendor since the acquisition.

But Invensys has been hit by a drop-off in revenue and profits, and the company singled out Baan as a weak performer during a business update in February. At the time, Invensys said Baan's financial performance in the fiscal year that ended March 31 would likely be "materially worse" than expected, despite efforts to cut costs and improve customer service.

Dave Wangler, senior vice president of global marketing at Baan, said officials at the software vendor are talking to several interested buyers and are looking to close a deal within months. "We're hoping we can make it a quick process, and as far as customers are concerned, it's business as usual," Wangler said.

But Todd Roeller, e-business technology manager at Flowserve Corp. in Irving, Texas, said the maker of liquid flowcontrol products is in a waitand-see position on Baan. "It's a little disconcerting thinking you're leveraged to a vendor's product that may be in trouble," Roeller said.

Flowserve runs a number of Baan applications, including one that lets its customers configure products and get pricing data online. The applications "need more investment to sat-

isfy our requirements," Roeller said. "Being on the chopping block will likely delay or eliminate

the future developments we're counting on."

Invensys made a mistake by announcing the planned sale before it had a buyer lined up, because the uncertainty could be a cause of concern for some users, according to John Moore, an analyst at ARC Advisory Group Inc. in Dedham, Mass. "Customers will be worried, whether or not they should be," he said.

However, Moore noted that Baan currently enjoys the highest customer satisfaction ratings it has had in years and that it has been largely successful in retaining existing users. Those factors, along with the quality of Baan's product line, should make it attractive to potential buyers, Moore said.

"If it's the right buyer, this could be a very good thing," said Keith Bearden, CIO at dental equipment maker A-dec Inc. in Newberg, Ore. But he said he would be concerned if Baan is acquired by a venture capital firm that puts profits above product quality.

"I hope that Baan is allowed to continue some of the moves they have started," Bearden said, adding that the software

Baan's March to The Auction Block

SEPTEMBER 2002: Invensys CEO Rick Haythornthwaite says his top priority at a Baan user conference will be to 'assuage fears' about the software vendor's future.

NOVEMBER 2002: Invensys discloses that the financial results of Baan and two related software businesses were down "considerably" in the first half of its fiscal year.

FEBRUARY: The company says that Baan's performance has worsened significantly and adds that it plans to review the value of its investment in the software vendor.

APRIL: Invensys puts Baan up for sale along with a group of business units that sell energy management products.

vendor's focus on customer satisfaction and continued development of its next-generation Gemini applications are "critical to the long-term success of the company."

Lawson Sticks to Product Strategy, Despite Losses

Company plans software updates, eyes acquisitions

BY MARC L. SONGINI

Looking to overcome a dropoff in revenue that has led to three straight quarterly losses, Lawson Software Inc. plans to continue to make incremental additions to its line of business applications.

Last week, at its annual user conference here, Lawson outlined a strategy to enhance existing product lines, by both acquisition and internal development. "We're going to be around for a long time," Jay Coughlan, Lawson's president and CEO, told attendees.

In addition to announcing an expected application out-

sourcing program at the conference [QuickLink 37685], St. Paul, Minn.-based Lawson said it's working with New York-based Deloitte & Touche LLP to offer a consulting service designed to help CIOs analyze the efficiency of their IT departments.

That sort of offering could help CIOs talk to CEOs and chief financial officers in business terms, said Jeffrey Pullen, team leader of financial systems at Lafarge North America Inc., a maker of construction materials in Herndon, Va.

A half-dozen users, including Pullen, said they're satisfied with Lawson and its product direction and expect the company to remain viable.

But Larry Kerr, director of enterprise resource planning for the city of Greensboro, N.C., noted that he encountered a series of software bugs during an implementation of Lawson's Series & human resources, finance and payroll applications. The project began last August and was completed in January.

Lawson upgraded some of the applications five times to fix the bugs, Kerr said, adding that the city had to pay additional consulting fees because of the upgrades. But the applications are now stable, he said.

A Lawson spokesman said the company has resolved the initial stability problems in the Series 8 software, which became available in 2001. About 40% of Lawson's installed base has migrated to the Web-enabled Series 8 applications, he added. •

NO NEED TO WORRY

Lawson's CEO says the company's financial health "is not even an issue." Read more:



War, Terrorism Fuel Fed's IT Budget Growth

Projected to grow 8.5% a year, IT spending could hit \$68B in 2008

BY DAN VERTON

Stimulated by the war in Iraq, increased threats of terrorist attacks and the formation of the U.S. Department of Homeland Security (DHS), the federal IT market could top \$68 billion by 2008, a new study predicts.

While the anticipated recovery of commercial IT markets never quite materialized in 2002, "the federal government remains an attractive marketplace based on its sheer size and consistent spending patterns," according to the "Federal IT Market Forecast" released last week by Chantilly, Va.-based Input. "Projected increases of 13% in [fiscal] 2003 spending over [fiscal] 2002 mean that the government is actually an engine of growth," the report stated.

Homeland security and e-government initiatives remain the highest IT priorities for federal agencies, said Payton Smith, manager of federal market analysis at Input. These two areas are driving significant near-term increases in spending, he said.

According to Input, government spending on IT products and services will increase at a compound annual growth rate of 8.5%, from \$45.4 billion in fiscal 2003 to \$68.2 billion in fiscal 2008.

Big Budget

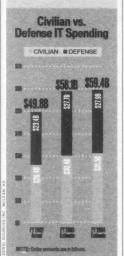
Driving much of that estimated growth is the recent formation of the DHS. The size of the DHS IT budget is second only to that of the Department of Health and Human Services among civilian government agencies, according to a market forecast by McLean, Va.-based Federal Sources Inc. For fiscal 2003, the DHS commanded a \$3 billion IT budget. Federal Sources projects that figure will increase to \$4 billion next year.

"The DHS is large enough

and expected to grow fast enough to rival the military services in terms of IT spending" by 2008, according to the Input forecast. And if Federal Sources' estimates are accurate, that would place the DHS IT budget above the \$6.5 billion mark, which is the current estimate for U.S. Air Force IT spending for fiscal 2004.

The "DHS is off the charts, with an IT [budget] gain of \$745 million" from fiscal 2003 to fiscal 2004, said Jim Kane, president and CEO of Federal Sources.

Input's forecast concluded that the growth in federal IT spending will be greatest for outsourcing services, as opposed to spending on hardware, software and telecom-

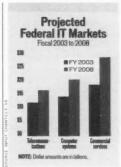


munications. In addition, outsourcing of government IT is expected to reach a high of nearly 87% in 2008.

The anticipated retirement of a large portion of the federal IT workforce, the critical lack of IT skills and the Bush administration's stated preference to partner with the private sector are all contributing factors to the anticipated growth in outsourcing, according to the Input study.

Kane recommended that companies take specific measures to ensure that they are positioned to take advantage of the new federal IT market.

For example, companies should map their product and service offerings to agency enterprise architecture plans and overall mission statements. In addition, business development managers should study the government's use of busi-



ness-case scoring, which in addition to setting certain security standards ensures that all new IT investments provide a return on investment that's equal to or greater than alternate uses of the same funding. It also requires that all such spending goes to products and services that directly support an agency's mission.

On Board Sun's Corporate Jet, McNealy Talks Mobility

BY PATRICK THIBODEAU Sometimes Scott McNealy wishes he didn't have a corpo-

rate jet.

Instead of leaving early from
San Jose for a five-hour flight
to Orlando to attend Sun's

iForce partner conference, the CEO of Sun Microsystems Inc. is getting out of his office late. He

says on the way to the airport that had he taken a commercial flight, he would have been forced to leave at a more reasonable hour and wouldn't be checking into his hotel at 2 a.m.

Sun's revenue is down for the quarter that ended March 30, off 10% from the same period a year earlier. However, the company posted a \$4 million profit on \$2.79 billion in sales. Meanwhile, competition from Hewlett-Packard Co., IBM and Intel Corp.'s 64-bit Itanium chip is accelerating. If McNealy is bothered by any of that, he doesn't show it as he boards his corporate jet.

His casual style — blue jeans and open collar in the mold of the Silicon Valley culture — belies his intensity. As the plane lifts off for Orlando, McNealy doesn't pause for a

second. He picks up his cell phone to make a point.

"This is ultimately what we think is

the big winner in the thinclient computing marketplace," he says. "It goes with you, and it's always on, and you take it everywhere."

McNealy built his company, founded in 1982, on a philosophy that the network is the computer. He sees ubiquitous networked devices, from cell phones to browsers on shopping carts connected to shopping lists at home, as the future.

McNealy talks animatedly about client-side applications, such as those being used in sales automation, written for Java-enabled devices — 100 million of which he says are already in use.

Sun, he says, is adding voice-over-IP technology to its Sun Ray thin-client work-stations. That means once a user logs onto a terminal with a Java card, the phone recognizes that user. This summer, Sun will release a software stack running on Linux codenamed Mad Hatter to boost its desktop offerings.

The total package is a direct attack on the desktop PC. Does Sun see itself as an alternative to Microsoft Corp.?

"It depends on who you are," McNealy says. "For the hundreds of thousands of Sun Ray users, we already are. For those who want their PC, they may hope never.

"We don't build a strategy based on what our competitors are doing," he says. "We build a strategy based on what our customers want."

Microsoft is moving deeper into the enterprise on the strength of its desktop dominance, and Sun officials say their client strategy will help boost enterprise sales. But while company officials claim that they can chip away at Microsoft, they aren't making any bold predictions or even offering safe bets.

"We're not trying to beat Microsoft; we're not trying to challenge Microsoft," Mc-Nealy says. "We're trying to solve a problem ... and give people mobility with security."

When the plane lands in Orlando, a car to pick up the CEO has yet to arrive. Mc-Nealy seems almost amused by his sudden lack of mobility.

Meeting with his iForce partners the next day, Mc-Nealy is as outspoken as ever. If he's tired, he hides it well.

He touts the company's \$5.3 billion in cash reserves. "We're doing just fine operationally," he says, unable to refrain from taking one more stab at Microsoft: After all, he says, Sun has a cash position above everyone who "isn't a convicted monopolist." "



BRIEFS

Microsoft Offers Cautious Outlook . . .

Microsoft Corp. reported a \$2.79 billion net profit on revenue of \$7.84 billion for its third quarter, which ended March 31. Revenue was up 8% from \$7.25 billion a year ago. But Microsoft offered a cautious outlook, saying there is no sign that corporate IT spending or overall demand for PCs is picking up. Microsoft expects its fourth-quarter revenue to be similar to the third-quarter total.

... And Agrees to Settle Florida Suits

Microsoft also said it has agreed to pay up to \$202 million to settle class-action lawsuits that accused the company of violating Florida's antitrust and unfaircompetition laws. The money will be distributed in the form of vouchers that can be used to buy desktop or portable PCs running any operating system.

IBM Q1 Earnings Up But Below Plan

IBM fell short of Wall Street earnings expectations but still reported year-over-year profit and revenue growth for the first quarter. The company said it had net income of \$1.38 billion on total revenue of \$20.07 billion. Among other top vendors reporting first-quarter results, SAP AG said its profit nearly doubled year over year to \$201 million. despite an 8% drop in revenue.

Short Takes

WORLDCOM INC. filed a proposed financial reorganization plan with the U.S. Bankruptcy Court and said it will now use MCI as its brand name. . . . IT services firm ACCENTURE LTD. said it's cutting about 750 of its 75.000 employees..., SIEBEL SYSTEMS INC. announced an upgrade of its **Universal Application Network** software, which ties the company's CRM applications to other systems.

Tools Promise Better Security Management

New products allow centralized administration

BY JAIKUMAR VIJAYAN SAN FRANCISCO

ENTRAL management of multivendor security systems and the data they generate can lead to better risk management and auditing capabilities, users said at last week's RSA Conference 2003 here.

And vendors are lining up to tap into that opportunity, with new products offering singlepoint administration of activities ranging from threat identification and mitigation to identity management, access control and configuration of security systems made up of products from multiple vendors.

Conference host RSA Security Inc. rolled out identity and access management software called Nexus that's designed to allow central administration of all of RSA's security products. With it, users will be able to centrally manage user and access policies, validate the authenticity of digital certificates and enforce consistent security policies, according to Bedford, Mass.based RSA.

Such integration would be "nirvana," said Luis Suarez, vice president and manager of PKI and encryption key management at Wachovia Corp. in Charlotte N.C.

The goal is to make management of disparate technologies "more transparent and seamless," said David Young, IT program director at Geisinger Health System in Danville, Pa. "It is something we have been trying to get our hands around for some time."

Competing Moves

Making a similar announcement was Computer Associates International Inc., which said it will launch its eTrust

Here's a sampli	ng of newly available	security management products:
PRODUCT	SUPPLIER	DESCRIPTION
■ Nexus	RSA Security	Allows central management of RSA's integrated identity- and access-management software.
Security Information Management	NetForensics Inc.	Collects and correlates real- time security event information from firewalls, IDSs, antivirus tools and operating systems.
■ Tivoli Risk Manager	IBM	Provides a central console for identifying and managing

Security Command Center later this quarter. The product, which is in the final stages of beta testing, will give users a browser-based interface for centrally administering multivendor security infrastructures, according to CA.

A week earlier, ArcSight Inc. in Sunnyvale, Calif., announced that it has expanded the number of products supported by its ArcSight 2.1 risk management software. The product can now collect, correlate and centrally report security event data from more than 60 products, such as firewalls, intrusion- and spam-detection software and identity management tools, company officials said.

Driving the need for such tools is the growing complexity of managing a robust security infrastructure, said Karl Jackson, a systems engineer at Brigham Young University in Provo, Utah.

security threats.

Companies typically have an aggregation of firewalls, hostand network-based intrusiondetection systems (IDS), antispam and antivirus software, and access-control and identity-management tools. On top of all that is the data: a single firewall, for instance, can generate more than IGB per day. And IDS sensors can log nearly half a million entries daily.

"There are so many different products and so many different ways of looking at things. If I could put everything in one place, it's going to make my life so much easier," said Jackson, who for the past month has been beta-testing CA's Command Center - a product he's pleased with. "It's been great," he said. "It kind of centralizes everything, where before you would have to run all sorts of different applications."

Tools with the ability to gather and quickly correlate information from multiple devices allow companies to prioritize and manage security incidents from a single console, said Michael Rasmussen, an analyst at Forrester Research Inc. in Cambridge, Mass.

They also provide the ability to comply with regulations such as the Health Insurance Portability and Accountability Act, Rasmussen said.

.......

Vendors to Promote Integration of IT, Physical Security

Computer Associates is leading a multivendor initiative to define common standards for integrating the management of physical and IT security systems

Under the Open Security Exchange effort, CA will work with HID Corp. in Irvine, Calif., Gemplus International SA in Luxembourg and Tyco Fire & Security in Boca Raton, Fla.

HID manufactures physical access control systems, Gemplus makes smart cards, and Tyco is an integrator of physical security

The group has already drafted initial specifications for common administration of users and privileges, common authentication to IT systems and physical facilities, and centralized management and auditing of both functions.

Going forward, the Open Security Exchange will make the interoperability specifications available to standards bodies for consideration as onen standards, said CA Vice President Russell Artzt.

Integrating physical and IT security can give companies a more comprehensive view of risk and how to manage it, said Luis Suarez, vice president and manager of PKI and encryption key management at Wachovia. The bank is piloting a project that will enable users to access physical facilities and IT networks via smart cards.

But a lot depends on the extent to which additional vendors support such efforts, said Adam Stanislaus, vice president of physical security at First Data Corp. in Overland Park, Kan.

First Data is testing a CA technology called eTrust 20/20 to see if the product can centrally manage the financial firm's physical and IT access control databases.

For the technology to be really useful to First Data worldwide, it would need to support many more physical access control technologies from more vendors, Stanislaus said.

"We would like to see more partners involved. We hope it is an open architecture and not just [limited to] three or four companies," he said.

- Jaikumar Vijayan

Editor's Note

Mark Hall is on vacation. His column. On the Mark, will return in two weeks.

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The STEAT Storage software company.

Independent tests show VERITAS has the fastest Microsoft Exchange backup.

veritas.com

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FBI Begins Knowledge Management Face-lift

With Phase 1 of Trilogy network done, bureau tackles data mining, info sharing

BY DAN VERTON

HE FBI last week began focusing its attention — as well as tens of millions of dollars from its fiscal 2004 budget request — on improving its data warehousing and mining capabilities.

The bureau announced that it awarded a contract to New York-based ClearForest Corp. to deploy business intelligence software that supports a new FBI data warehouse that consists of a Terrorism Intelligence Database and an Information Sharing Data Mart. FBI agents are currently training on ClearForest's software, which will enable them to analyze multiple document repositories that house more than 1 billion documents.

Barak Pridor, CEO of Clear-

Forest, said the same technology has been used for years at large Global 2,000 firms such as The Dow Chemical Co., Thomson Financial and Ford Motor Co.

The FBI's focus on data mining follows the March 28 completion of the initial rollout of an enterprisewide network known as Trilogy. The \$400 million infrastructure program has so far yielded the deployment of 21,000 desktops, more than 3,000 printers and nearly 1,500 scanners, and it links 622 FBI offices via high-speed data connections. In addition, Trilogy will form the transport layer for the FBI's new Virtual Case File and an integrated data warehouse that will eventually link 31 FBI databases through a single Web portal, said FBI Director Robert Mueller, speaking

April 10 at a Senate Appropriations Committee hearing. The Virtual Case File database is slated to be fully deployed by year's end.

"We are now focused on implementing a data ware-housing capability that can bring together our information into databases that can be accessed by agents throughout the world as well as our analysts as soon as a piece of information is developed," Mueller said.

Long-range Plans

But getting to this point hasn't been easy, Mueller said. In addition to having to come up with \$138 million for the first phase of Trilogy out of an existing budget that didn't cover it, the bureau had to rewrite the original deployment plan, which Mueller said had provided little long-term vision for technology refreshment.

The original plan called for the addition of a new graphical user interface, without providing for upgrades to the FBI's central databases, said Mueller. Simply "putting lipstick on a pig... would not enable us to use the analytical tools we needed," he said.

In the aftermath of a recent report by the Justice Department's inspector general that criticized the FBI for spending "hundreds of millions of dollars" on failed IT projects, Mueller said he's tightening his grip on the bureau's IT purchasing, "I am looking at the information technology dollars with a view to making certain that every one of those dollars is spent wisely," said Mueller, referring to the \$82 million he's requesting in this year's budget specifically for IT refreshment and maintenance. "It makes no sense for us to have and put into place that which will be obsolete in two years.'

"One of the things we still hear is that agents in the field don't have e-mail addresses or access to individual machines because the technology just isn't as widely available as it would be in a corporate setting," said William Harrod, director of the Investigative Response division at TruSe-

Trilogy Network

- Final phase scheduled for next year.
- Currently covers 92% of the FBI's U.S. workforce.
- Virtual Case File will replace outdated system of redundant searches of stovepiped datahaces.
- Integrated data warehouse will link 31 FBI databases for single portal searches and data mining.

cure Corp. in Herndon, Va. Harrod spent 14 years in the FBI.

James Williams, director of security solutions at managed security services firm Solutionary Inc. in Omaha and a former FBI agent, said upgraded core database systems are among the most critical needs of the FBI. "The speed at which you could obtain information was strikingly slow, and you would get on one system and not be able to get to another," said Williams, referring to his experience using the older automated case-file system. "It's the most important piece of infrastructure that the bureau has." >

FBI Has Made Major Progress, Former IT Chief Says

For the past 18 months, the FBI has been frantically trying to dig itself out of in knowledge management sinkhole created by years of mismanaged IT projects. And according to the bureau's former IT chief, progress to date has been astonishing.

Robert Chiaradio, managing director of homeland security at McLean, Va.-based BearingPoint Inc., spent 18 years in the FBI. He left the bureau last July after serving for 18 months as executive assistant director for administration. In that capacity, Chiaradio was one of four officials who reported directly to FBI Director Robert Mueller and was responsible for the bureau's entire IT budget.

According to Chiaradio, years of deploying IT systems without a

view toward an enterprisewide architecture resulted in an "improvised" IT infrastructure of more than 50 stovepiped applications written in various languages and running on disparate systems.

"What they ended up with was a critical shortfall in knowledge management," Chi-

aradio said. "That became obvious very quickly after Sept. 11, 2001."

However, a threepart modernization effort, started under former director Louis Freeh, includes the deployment of the Trilogy network, deployment of upgraded desktop hardware and servers, and a user application component that focuses on Webenabling a handful of the most important investigative databases and systems. The most important of those systems is the Automated Case File system.

"Web-enablement really was the issue," said Chiaradio. But af-

ter Sept. 11, "Mueller immediately recognized that there was notime to wait, and he ordered that the three-year timeline for the modernization project be truncated to 'as soon as technically possible."

Several weeks after the attacks, Mueller asked Chiaradio to return to FBI headquarters from his position as the agent in charge of the Tampa, Fla., field office, to help push the modernization effort into overdrive. Chiaradio met with the FBI director at 5 a.m. on Oct. 1, 2001. The meeting lasted three hours, after which Chiaradio devised the concept for the Virtual Case File system.

Developing the SystemWithin days, Chiaradio had put together a team of FBI "practi-

together a team of FBI "practitioners" and had begun developing a prototype of how the new system should work. What he found was that the FBI was predominantly a paper-based organization that was losing intelligence as fast as it was collecting it.

"The new system was built with the capability to automate and scan all paper-based information into a relational database that can be mined. An intelligence-gathering organization needs to know what it knows," Chiaradio said.

By all accounts, the initial work was a major redesign, But the work is far from over. Mueller will need more money for what Chiaradio calls the cleanup phase, during which all of the data repositories that have yet to be redesigned for Trilogy will be either re-engineered or replaced.

Several hundred back-office systems must also be put through the same process, said Chiaradio. One of those is the financial system, which the FBI plans to replace with a unified financial management package.

"The back-office applications are as important to the mission as anything else," Chiaradio said. "They are the logistics train."

- Dan Verton



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Switch-based Wireless LAN Market Heats Up

Networking vendors prep for launches

BY BOB BREWIN

XTREME NETWORKS Inc. and Trapeze Networks Inc. last week introduced switch-based enterprise wireless LAN products to get a jump in a market that analysts expect to get crowded — and soon.

Another five vendors that declined to be identified plan to launch competing products by the start of the Networld+ Interop conference in Las Vegas April 27. Similar switch-based systems were launched by Nortel Networks Ltd. last month [QuickLink 37435] and by Symbol Technologies Inc. last year [QuickLink 32531].

Older Wi-Fi hardware puts

all the intelligence technology, such as security and the radio frequency (RF) modules, into a ceiling-mounted piece of hardware called an access point (AP). The newer switch-based architecture reduces the AP to a dumb terminal containing just RF modules, with security and management housed in a rack-mounted switch.

Gemma Paulo, an analyst at In-Stat/MDR in Scottsdale, Ariz., said this approach allows enterprises — which must install tens if not hundreds of APs to cover a corporate campus, manufacturing plant or warehouse — to buy relatively inexpensive APs.

Companies can then put their money into switches that provide IT managers with more control over their wireless networks than they could achieve with an older-generation "smart" AP.

Aaron Vance, an analyst at Synergy Research Group Inc. in Phoenix, said the large number of companies vying to

WHAT IT DOES

A switch-traced wire-

less LAN architecture

point to a dumb termi-

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enter the market represents the continuing boom in the WLAN industry and a sense of untapped opportunities in the enterprise WLAN market.

Despite this growth, Paulo said the market might not be able to support so many new products as well as older systems, such as the smart AP-based systems from Proxim Corp. in Sunnyvale, Calif., and Cisco Systems Inc.

She also said Cisco, the dominant player, could put heavy pressure on its competition by introducing a similar switched-based architecture.

Paulo stressed that not all switched-based WLAN products are equal, adding that Extreme Networks' entry stands out. Its product combines the functionality of a 48-port 10/100 Ethernet wired switch with a system that can manage

> dumb wireless APs that operate under the 802.1lb, 802.1lg and 802.1la standards.

Vipin Jain, vice president of the WLAN access group at Santa Clara, Calif.-based Extreme Networks, said all WLAN management is built into the switch. The Extreme Networks Summit 300-48 switch sells for \$6,495, while a dumb AP sells for \$595.

Paulo said WLAN switchbased products from Symbol and those introduced last week by Pleasanton, Calif.based Trapeze Networks lack the tight integration between wired and wireless networks offered by the Extreme Networks system.

But according to Vance, they do provide easier centralized management than older APs, which need an upgrade in firmware if network managers want to beef up security. Trapeze has also built in the ability to detect unauthorized users and rogue APs on the network.

MORE ON THIS TOPIC

For comprehensive coverage of wireless LAN systems, visit our Mobile/Wireless Knowledge Center:

QuickLink k1000 www.computerworld.com

BMC Looks to Simplify Mainframe Management

Software targets IT workers lacking mainframe skills

BY MARC L. SONGINI

In a bid to help mainframedependent companies protect their investments, BMC Software Inc. is rolling out software designed to simplify and automate big-iron systems management processes for a wider group of IT workers.

Houston-based BMC today plans to announce System Advisor for z/OS, the first in a planned line of Java-based tools that it said will let IT staffers who lack mainframe skills manage mainframe computing resources. For example, network or Unix specialists will be able to use the software to manage mainframes via a streamlined graphical user interface (GUI).

Calvin Guidry, vice presi-

dent and general manager of enterprise systems management at BMC, said keeping mainframes running smoothly could become more of a challenge as companies face a predicted shortage of mainframesavvy IT workers [QuickLink 37362].

Typically, mainframes are

PRODUCT DETAILS

System Advisor For z/OS

KEY FEATURES:

- Built around a browser-based, Windows-style GUI.
- Includes the ability to manage mainframe clusters and storage systems.

PRICING AND AVAILABILITY:

- Starts at \$17,000 and is shipping now.
- Prices vary depending on how it's configured.

managed through 3270 greenscreen terminals or specialized interfaces, Guidry said.

Among other features, the System Advisor GUI uses text messages to help simplify systems configuration and application service management tasks, he noted. Systems managers will also be able to use the software to set performance thresholds, restart systems and oversee workload management, data integrity and storage operations, according to BMC.

Given the graying of the mainframe workforce, that sort of point-and-click tool could help younger IT staffers get up to speed on mainframes, said Larry Riggen, a principal technology consultant at Cinergy Corp., a Cincinnati-based utility and energy services firm.

At Cinergy, which runs BMC's Mainview mainframe management software and its tools for managing DB2 databases, there is also tremendous pressure to cut costs, Riggen said. The utility will probably consider BMC's new offering as a potential way to meet those goals, he added.

Computer Associates International Inc. and IBM's Tivoli Software unit have also recognized the anticipated thinning of the mainframe talent pool, said Richard Ptak, an analyst at Ptak & Associates Inc. in Amherst, N.H. He said both CA and Tivoli will likely make similar product announcements in the near future.

CA said it already sells several Windows-based tools like System Advisor to ease mainframe job management, automation and security administration for IT staffers trained on other systems. Tivoli said it is shipping a mainframe management application that can be used by various IT workers and is developing portal software to provide integrated mainframe monitoring.

Corrections

An April 14 News section story ("Intrusion Prevention Touted Over Detection") misidentified the company that's acquiring Entercept Security Technologies Inc. and IntruVert Networks Inc. Earlier this month, Network Associates Inc. agreed to buy both Entercept and IntruVert.

In in March 31 Management section story ("Cold Calls Feeling the Heat"), the annual fee that Bankers Life and Casualty Copays to use Gryphon Networks Corp.'s call-blocking service was incorrectly reported. Bankers Life doesn't release the payment information

In the same story, Illuminet was incorrectly identified as a long-distance telecommunications carrier. Illuminet, which is owned by YeriSign inc., sells SS7 network and database services to carriers.

A story in the March 24 News section ("War May Prompt Firms to Delay Offshore Work") incorrectly listed the location of The Telvista Co., which operates outsourcing call centers in the U.S. and Mexico. Telvista is in Delias.

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BRIEFS

Bank of Ireland Picks HP to Run IT

The Bank of Ireland said it has chosen Hewlett-Packard Co. for a seven-year IT outsourcing contract worth about \$600 million, pending final negotiations with HP. A spokeswoman for the Dublin-based bank said it will likely take four to six months to agree on the full terms of a contract. About 500 of the bank's IT workers are due to be transferred to HP as part of the deal.

Intel Puts 3-GHz Processor on Hold

Intel Corp. halted shipments of a 3-GHz Pentium 4 processor, just hours after formally announcing the chip. Intel said that it had found an unspecified "anomaly" in a small number of the devices. HP, Dell Computer Corp. and Gateway Inc. introduced desktop systems that use the new processor, but all three said they were unsure how the shipment hold would affect their deliveries.

EMC Sees Profits For Rest of 2003

EMC Corp. reported a first-quarter profit of \$35 million and said it expects to stay in the black for the rest of the year. The Hopkinton, Mass.-based storage vendor said it had revenue of \$1.38 billion in the first quarter, up 6% from the year-earlier level of \$1.3 billion. EMC also acquired Astrum Software Corp., a Boston-based vendor of storage resource management software.

Short Takes

QUANTUM CORP. in Milpitas, Calif., and STORAGE TECHNOLOGY CORP. in Louisville, Colo., filed dueling lawsuits. They have charged each other with infringing on patents related to tape drives. . . . PEOPLESOFT INC. in Pleasanton, Calif., announced a set of 13 business applications tailored for midsize users with annual revenue of up to \$500 million.

AMD Readies Rollout Of 64-bit Server Chip

Microprocessor will also support 32-bit applications

BY TODD R. WEISS

HIP MAKER Advanced Micro Devices Inc. will formally launch its 64-bit Opteron server processor tomorrow, and some software and hardware vendors have been quick to jump on the bandwagon.

For example, SuSE Linux AG plans to make available this week a version of its Linux distribution for use on Opteron-based systems. Nuremberg, Germany-based SuSE has created a release of the open-source operating system that lets users run 32-bit applications as well as 64-bit ones, said Markus Rex, SuSE's vice president of development. SuSE built the release out of the same code it uses for servers based on Intel Corp.'s Itanium and x86 chips and IBM's mainframe, midrange and Unix systems, which should make it easier for vendors to develop applications for Opteron systems Rex said.

Red Hat Inc. in Raleigh,
N.C., said it plans to have an
Opteron-enabled version of its
Linux operating system ready
in the fall. Meanwhile, Microsoft Corp. earlier this month
said it will start beta-testing
64-bit versions of Windows
XP and Windows Server 2003
for Opteron and AMD's upcoming Athlon 64 desktop
processor by midyear.

IBM said it will have an Opteron version of its DB2 Universal Database ready this summer, initially supporting SuSE's Linux software. Oracle Corp. confirmed that it's also developing a release of its Oracle9i database that will run on Opteron-based systems.

Sunnyvale, Calif.-based AMD said it's talking with top server vendors about using Opteron in their systems.

Opteron Facts

Targeted uses: Servers and high-end workstaltons

Key features: An integrated memory controller and a new I/O technology called Hyper Transport; supports 32- and 64-bit apps Some smaller server makers, including Polywell Computers Inc., M&A Technology Inc. and Penguin Computing Inc., have already signed up to use the new chip. In addition, Nvidia Corp. in Santa Clara, Calif., said it plans to announce an Opteron-optimized graphics motherboard chip set for high-end workstations.

Bill Claybrook, an analyst at Aberdeen Group Inc. in Boston, said Opteron gives AMD a potential advantage over Intel's 64-bit Itanium chips because of its support for 32-bit applications. "With Itanium, you have to port them, and it's not necessarily an easy port," he said.

The support for both 32and 64-bit applications is where "AMD is really starting to show some muscle," said Ted Schadler, an analyst at Forrester Research Inc. in Cambridge, Mass. "That's pretty powerful, and obviously a decision Intel didn't make."

Continued from page 1

NetWare

stable operating systems; it just wasn't as usable. Now they're making it more usable with Linux."

Gardner acknowledged that his company, a steadfast Novell user, had some concerns about NetWare's future.

Although there is no official ship date for NetWare 7, Messman said Novell will follow its standard timeline of approximately 18 months between NetWare releases.

Messman said users who are paying maintenance fees will have the option to eventually migrate from the NetWare kernel to Linux. "It's a good migration path for NetWare users who were worried about where we were going with NetWare." he said.

Ensuring that file, print, storage, directory, Web development, resource management and other NetWare services will be available for the long haul "gives customers comfort." Messman added.

"I think it's a good strategy," said Elizabeth Lenzi, manager of IT at Prevent Child Abuse America. Officials at the Chicago-based nonprofit organization "had a lot of concern" about where Novell was heading with NetWare, she said. "It seems like they're coming back strong, hopefully."

Even some users who said they lacked such worries are supporting the Linux strategy.

"It sounds like a great idea," said Victor Ponelis, a NetWare technologist at the University of Wisconsin-Madison. "For my part, there's no concern that NetWare is going to go away. We will simply adapt as

the industry adapts." If the NetWare kernel goes away, he added, "the services will be running on something else." Novell Vice Chairman Chris

Novell Vice Chairman Chris Stone said the decision to offer the Linux migration path was driven by users. "They were looking for an open door," Stone said. "We all know that Net Ware's revenue has been dipping over the years. So what do you do? You take the services and you make them the value."

Stone and Messman both contended that for NetWare users, having the choice to migrate to Linux will be more important than actually exercising it. "I think once they get that option, they'll choose not to do it," Messman said. "They just need to know they can."

But some BrainShare attendees said that they had no intention of migrating off of NetWare in the first place.

"Our core processing is all done on NetWare, and that's not going to change in the foreseeable future," said Ken Forgie, assistant vice president and IT manager at Asheville Savings Bank in Asheville, N.C. "They're a stable enough company where we've never really had those doubts."

In addition to giving Net-Ware users a possible way forward, Novell is claiming that it has a lot to contribute to the open-source community by improving the Linux kernel.

"Linux is an immature operating system right now," Messman said in an interview with Computerworld. "It hasn't had somebody like Novell worrying about making it robust, reliable and scalable for very much time. We think we can bring that to the Linux kernel."

In a letter to Linux Weekly News, Messman subsequently apologized for calling Linux "immature." He stressed that "Novell wouldn't be taking this bold step if we didn't feel Linux was a solid operating system" [QuickLink a3060].

Announcements at BrainShare

- A plan to release Java-based Linux and Macintosh clients for GroupWise later this year.
- The Novell Forge Web site (http://forge.noveli.com), to be for open-source developers.
- The launch of a Certified Linux Engineer certification program.

MORE ONLINE

Novell Vice Chairman Chris Stone discusses the internal "food fights" that yielded the Linux strategy:



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Tight IT Budgets Put Crimp in SAN Plans

Storage managers look to add tools to automate tasks

BY LUCAS MEARIAN

ARYL BLACK, a storage architect at Telus Communications Inc., last week said the biggest challenge he will face this year is trying to manage the company's 170TB of storage following layoffs that cut Telus' TT staff from 1,300 people to 750.

With only 30TB of networked storage in place, Black said, increasing the amount of disk capacity that resides on Vancouver, British Columbiabased Telus' storage-area network (SAN) represents the lowest-hanging fruit for him.

Black was one of many Storage Networking World attendees who said they're looking to in-

creased automation and storage consolidation as ways to do more with fewer resources.

But some attendees said they're getting push-back from higher-level executives who are still reluctant to spend money on emerging SAN technologies. John Dias, a systems engineer at Hibernia Corp. in New Orleans, said he and other IT staffers there had to contend with budget cutbacks that

forced them to rejustify technology investments previously approved by officials at the bank. "We're not

able to buy everything we wanted." Dias said.

STORAGE

NETWORKING

In November, Dias deployed a storage resource management tool that lets him see what data is being stored where on Hibernia's 25TB SAN. But Dias noted that he still can't convince upper management that performing incremental rather than full backups of servers would help the company conserve storage space.

Gary Pilafas, a senior storage and systems architect at UAL Loyalty Services Inc., a unit of United Air Lines Inc. that manages the company's frequent-flier program, said business managers are tired of seeing his face every quarter. "Whether it's for \$100,000 for storage or a million . . . the first question out of their mouth is, 'How do we really know how you're using it?' " Pilafas said.

Pilafas in December was able to deploy a SAN management tool developed by Longmont, Colo.-based CreekPath Systems Inc. that uses predefined policies to automate storage reporting, provisioning and security, greatly reducing the time IT workers need to devote to those for-

merly manual tasks.

Yet Pilafas said he still wrestles with business management to get them to understand that United needs to take more steps to ensure that things won't break down as the SAN grows. "You need to be proactive in establishing what could potentially happen if we don't do this," he said.

Glenn Exline, manager of advanced technologies at Patrick Air Force Base in Cape Canaveral, Fla., said funding allowed him to deploy a SAN last September to replace the base's direct-attached storage. The storage network has let the base's IT staff consolidate servers and cut its data backup window from 14 hours to just two, Exline said. Now he hopes to buy a storage resource management tool to give him and other IT managers a better view of what's being stored on the SAN.

Continued from page 1

Storage

vices from different vendors. "That will be where we'll be able to achieve the functionality we want," she said.

One potential roadblock is corporate reluctance to spend money on new technologies (see story above). But virtualization software, which makes the storage space on different disks look like a single pool, is becoming the cornerstone of efforts to develop more automated storage infrastructures.

Most products now on the market support virtualization on a single disk array or server. Network-based virtualization promises to allow disk storage devices across an entire SAN to be centrally managed as a single entity.

Cisco Systems Inc. and Brocade Communications Systems Inc. are both building network-based virtualization capabilities into their storage switches. Meanwhile, Hewlett-Packard Co., Sun Microsystems Inc. and IBM are shipping or will soon ship products that support virtualization approaches, though initially for their own storage devices only.

Rod Lucero, chief IT architect at Conseco Finance Corp. in St. Paul, Minn., said virtualization tools are helping the company save money. That's particularly important as Conseco Finance seeks to emerge from Chapter II bankruptcy protection, which it filed for in December along with parent company Conseco Inc.

Last year, Lucero installed a virtualization appliance made by Fort Lauderdale, Flabased DataCore Software Corp. to pool together 70TB of storage on EMC Corp.'s Symmetrix and Clariion arrays. Since the rollout, Lucero said, storage utilization rates on the SAN have increased from about 55% to 85%. In addition, the time it takes to provision storage space for new applications has been cut from four days to one hour.

The \$190,000 that Conseco Finance paid for the DataCore software has already been recouped by the company three-fold through cost savings, Lucero said. For example, it was able to postpone plans to buy an additional 3TB of capacity, saving about \$280,000. "The next thing to move toward... is the ability to have a single interface that allows me to see my infrastructure from end to end," Lucero added.

Currently, no top-tier vendors sell network-based virtualization products that support rival storage devices. But HP and EMC have both said that they plan later this year to make their storage management software available on new switches made by San Jose-based Brocade that support virtualization on multivendor SANs.

Storage Group Releases Proposed Management Software Standard

After years of foot-dragging by vendors, the storage industry is finally coming together around an open storage management soft-ware interface that's expected to reduce the complexity of managing multivendor SANs.

The Storage Networking Industry Association (SNIA), which represents about 300 vendors, announced all Storage Networking World that it has published for public comment Version 1.0 of the Storage Management Initiative Specification (SMI-S), a 350-page set of interface guidelines formerly known as Bluefin.

SMI-S will provide storage management vendors with common application programming interfaces. The specification uses two related standards: an object-oriented storage management framework called the Common In-

formation Model (CIM), and Web-Based Enterprise Management, which defines an interface layer for sharing CIM data between products.

During a presentation at the conference, SMM Chairman Sheila Childs called an users to insist that vendors make their storage management software compliant with SMI-S. The specification is expected to be finalized by October, she said.

Joel White, a business technologist and storage architect at Allistate Insurance Co. in Northbrook, Ill., said that once SMI-S is adopted by vendors, he should be able to use a single management application to control mixed storage installations. "That's going thelp us unsure our investment in legacy hardware," White said.

- Lucas Mearian

Virtualization Vendors

IBM is expected to announce next month a virtualization appliance that will be built around two redundant Linux servers and support its disk arrays.

CISCO said if plans to develop modules that support virtualization techniques for its MDS 9000 line of storage switches.

BOTH HP AND EMC are developing storage management software for new Brocade switches that support network-based virtualization.

SUN this month announced storage pooling and consolidation capabilities that are available through its IT services unit.

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MARYFRAN JOHNSON

The Accordion Effect

ARY PILAFAS CALLS what the storage industry is experiencing right now the "accordion effect," referring humorously to the way the old-fashioned musical instrument makes music only when all that hot air is squeezed out. As a senior storage architect at UAL Loyalty Serv-

ices Inc., the e-commerce arm of financially stressed United Air Lines, Pilafas has a front-row seat for this particular concert. "It's the march to consolidation," he said last week at Computerworld's Storage Networking World conference in Phoenix. "It's happening now, and it's a good thing."

Consolidating storage resources to cut costs and streamline management was a dominant

chord struck at the gathering of 1,800 IT professionals, storage managers and vendors. When audience members were polled about what the top benefits of storage networking technologies are, consolidation was the top pick, beating out cost savings and improved functionality. IDC estimates that consolidating access and data management into a single location can slash storage management costs by up to 70%.

"Everybody into the resource pool" was another popular tune. That one refers to the flurry of virtualization software offerings now showing up to audition for skeptical users, who are rightly figuring that this technology has miles to go before its promises will be kept. Virtualization software holds out the hope of making disk space on different servers appear as a single storage pool, to be dipped into and divvied up as needed across the

But if this accordion effect is making music from consolidation and virtualization, what's getting squeezed out as so much hot air? The oncestunning profits from storage hardware sales and the future of proprietary or closed storage architectures.

The storage industry is sliding fast



down the slope of hardware commoditization, sending vendors scrambling for new ways to make money as old business models slip away. Sales of disk storage fell from \$17.4 billion in 2001 to \$13.3 billion last year, according to IDC. That sales decline also reflects the steadily dropping price of a megabyte of storage, which has plummeted at least 40% in the past few years. Meta

Group predicts that while storagerelated costs will constitute 70% to 80% of server purchases through 2004, storage hardware sales will decline 30% or more as the emphasis shifts to software, services and storage-area networks (SAN).

As this spending shift accelerates. so too will the migration toward open architectures and standards. If last

week's conference is any indication, users will be dragging their vendors there by the hair. Storage managers ultimately want storage infrastructures to be as reliable, highly available and standardized as Ethernet networks

"Standards have now gotten to the point where customers have been able to force some interoperability onto the vendors," noted Pierre Baudet, business systems manager at New Balance Athletic Shoe Inc. and a conference speaker.

Making a virtue out of that necessity, the Storage Networking Industry Association last week unveiled specifications for its long-anticipated Bluefin technology. This open management software interface standard - designed to help users apply central controls to enterprisewide SANs - already has the backing of dozens of storage vendors, including IBM, EMC, Hitachi, Sun and Veritas Software. Renamed as the Storage Management Initiative, or SMI, this specification is the storage industry's first giant step toward an interoperability standard

So as we wait for the next chorus to begin, users should lean hard on their storage vendors to incorporate this emerging standard in upcoming products. And vendors should be asking themselves, "Do I want to make music or just blow hot air?"

PIMM FOX

Web Services: Been There, Done That

THE THING TO DO when evaluating requirements for a new computing environment is to learn a little history.

In the new era of distributed Web services, you're expected to manage things you don't control. Sure, there's lots of simplicity and clarity, with architectures (such as SOAP) that make it easier to connect things together. but that shifts the burden to the management of these services. For example, how do you distinguish requests from different customer groups? Or how do you identify breaks in a Web service request?

But we've been here before, with the management of databases and applica-

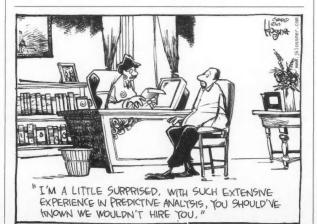
tions. And, not so strangely, some of the players have remained the same as well. At Oakland, Calif.-based Amber-Point Inc., several members of the executive team are veterans of Ingres and Forte, where they tackled similar issues. Ingres started out with a relational data-



base system, and Forte offered tools to build distributed applications with apportioning and partitioning. Even the venture backers remain constant: Palo Alto, Calif.-based Sutter Hill Ventures invested in all three companies.

This continuity of venture capital investment is important because it sends two signals: first, that the vendor experience is mature and linear, and second, if Sutter Hill's histories with Forte and Ingres are examples, that you can be reasonably assured that longevity is built into the company's business plan. Both Ingres and Forte were around for a decade before being acquired by Computer Associates and Sun Microsystems, respectively.

But understanding the operational requirements your company faces should get your attention when opting for Web services. Right now, you've got three basic approaches to Web ser-



vices, each of which requires its own management method.

First, there's the Web service you internally build in Java or .Net and for which you maintain the source code. Second, there are packaged Web services from the likes of PeopleSoft, SAP and Microsoft (things that you install but don't have the source code for and that are therefore out of your control). Finally, there are the external Web services that your company or department uses although it has little say when it comes to versioning or upgrades. Chances are, most companies will have a mixture and still be faced with the prospect of keeping everything up and running.

As more Web services show up in application servers, plan to investigate tools that can look at messages and manage them based on what's in the message. Also, select vendors with deep IT management experience, realistic financial backing and a willingness to admit that the problems of today aren't the problems that will need to be addressed a year from now. >

ARI KAPLAN

Legal Links For Your Supply Chain

POR THE PAST FEW weeks, my mother-in-law has been eyeing a certain technology stock, waiting for it to reach her strike price. To monitor the markets, she uses a tracking service that streams quotes on her cellular phone. If you offer a service like this — one that requires data from an unrelated third party — be sure to structure your arrangement wisely to ensure your protection and your customers' satisfaction, especially if you count my mother-in-law among them.

IT managers aren't always involved in these business or legal discussions. But they should be, especially when data access is at issue.

Before these talks begin, a nondisclosure agreement must be signed. This will preserve confidentiality and protect trade secrets, which may include the design of your proprietary systems to which the data feeder may have access.

If copyrighted data is being offered

to you, require proof that your counterpart owns all of the intellectual property that's subject to the transaction. And while you're at it, secure a warranty on the functionality of the application being shared or accessed. Make sure it's scalable, too. (This is key for emerging growth companies that could have 1,000 users one month and 100,000 the next.)

In your agreement with
the third party, clearly state
who owns the final application. Ownership of the end result can be tricky
because some programs require extensive maintenance, which may prove
difficult for a limited in-house team to
handle. Nevertheless, possession has
significant control-related advantages.

If you're offering your customers data that they will rely on to make important decisions such as stock purchases, you could expose your company to certain liabilities. (I don't want



ani narcan is an attorney in New York and can be reached a arrestaglan set. This article is for reference only and is not legal advice.

to even think about the call I would get from my mother-in-law if she bought her stock at the wrong price because of a misquote.) CIOs should therefore require assurances against, as well as indemnification for, any incorrect data (not including market fluctuations, of course) in any contracts they sign.

Supply chain pacts should require that the networks on which information travels are secure,

and they should contain more detailed provisions that outline cyberterrorism contingencies specific to your business. In the event of a cyberattack, try to obtain preferences for your systems so you will be the first to get the data once the feed has been repaired.

Be aware that developers can build time-activated codes or periodic reauthorizations into their work. This is designed to give them the option of turning off the feed when you don't live up to your end of the bargain. Although it's typically a last resort and requires notice of its use, it can happen. You should, therefore, address such limits upfront.

Disagreements can also arise, so include a dispute-resolution provision. In the modern environment, cost- and time-conscious CIOs may want to consider online alternatives. They can be faster, more efficient and don't require long-distance travel or litigation.

Perhaps most important in managing risk is obtaining comprehensive insurance that provides for all contingencies. Companies should also build redundancy into their systems so that they always have a backup supplier of critical items.

Ultimately, entering negotiations in good faith and with reasonable expectations is the key — anything to avoid that call from my mother-in-law.

WANT OUR OPINION?

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READERS' LETTERS

New Buzzwords Are Just Old IT Ideas

THE LATEST "real-time enterprise" hype from Gartner is just classic IT from the last decade reackaged with a new set of buzzwords ["Gartner: Change Management Needed Before Real-Time Data Can Flow," QuickLink 37350]. There's no doubt that it's a good thing; it's just not a new thing, except for the latest enabling technology, Web services and portals—and even those aren't that new anymore.

The concept of leveraging technology to reduce processing time is as old as IT itself. I agree that change management is a critical component of ensuring the success of any investment in real-time data flow. But that's the case with introducing any new capability to a business.

Haven't will figured that out with the past decade of taking brickand-mortar companies online? As you introduce new technology, the management team needs to be on board with how to run the business differently to fully leverage it.

And it doesn't logically follow that there's an "increased need . . . to get real-time applications and interfaces built quickly." Gartner is stretching quite a bit to use its "real-time enterprise" concept to justify rapid development. You could conceivably take a long time to develop a real-time enterprise application, and it will still get you the data in real time once it's up and running.

Scott Marean

Assistant vice president of program management services, First Penn-Pacific Life Insurance Co., Schaumburg, Ill., scott_marean@firstpenn.com

More Hiring Needed

N ALL BUT the most gigantic enterprises, the problem is even

terprises, the problem is even worse than described in the article "Gartner: Change Management Needed Before Real-Time Data Can Flow." My example comes from the health care industry, but I saw the same problems in state government, where I worked for seven years.

Many health care organizations are having to embrace electronic patient records, electronic insurance-claims processing and submission, and other systems pursuant to HIPAA. However, they are trying to do it without following IS best practices in any sense of the words. They don't staff positions such as computer operator, programmer or systems analyst; they just plain don't hire any more IT people than they had before they went to electronic records. They do hire well-trained and competent people, but they want programming and systems analysis out of the guys they're forcing to sit at the held cels all day.

Am I the only one who thinks programming, systems analysis and similar disciplines require sustained focus?

Geof Rarick

Database/network/ telecom administrator, Thoracic & Cardiovascular Institute, Lansing, Mich., grarick@tciheart.com

What Irag Needs

A ITHOUGH COMPUTERWORLD is dedicated primarily to computer technology and its impact on the world, I think your writers could use a bit of a wider view on the topic of war in Iraq ["Postwar Iraq May Be Big IT Market," Quick-Link 37/79]. In postwar Iraq, there

will not be an immediate need for an IT infrastructure. There will be immediate needs for a stable government, assurance of continued food and potable water supplies, decent health care, freedom from the potential of intertribal conflict, nesse of transportation and all other aspects of life necessary for a stable society.

The people of Iraq will have suffered enough from Hussein's depredations. Let's see how technology can help clean up that mess first, before the megacorporations start slavering over their next rounds of profits.

P.D. Levin

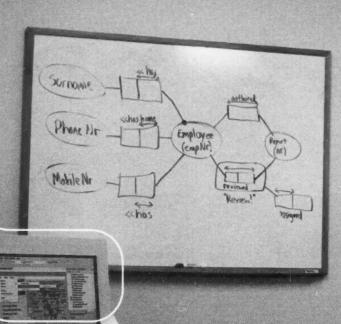
R&D systems engineer, Pittsburgh

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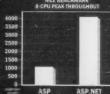
Visual Studio .NET can help you with (nearly) every part of your job. Your Web applications just got faster. ASP.NET, the Web application environment in Visual Studio .NET, offers dramatically improved performance over classic ASP. Here's how:

Compiled Page Execution ASP.NET pages are compiled once and cached in memory instead of being interpreted each time the page is requested. ARICH Output Caching ASP.NET's caching features quickly retrieve database queries, full pages for parts of pages), and objects from memory for improved app performance. To Crash Protection Web applications can't be fast if they're

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It can't tell you whether this is meatloaf or lasagna. NILE BENCHMARK 8-CPU PEAK THROUGH

down. Duh. So ASPINET automatically detects and recovers from errors like deadlocks so your application is always available. And now the newly released Visual Studio. NET 2003 is here for building and deploying even faster and more stable applications. Try it now: log on to a fully featured, free" online hosted session and get Visual Studio.net more information at msdn,microsoft.com/vstudio/tryit



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Survey results and stories that offer practical advice from IT leaders using these technologies will be published in the September 22, 2003, issue, as well as online at Computerworld.com. INNOVATIVE TECHNOLOGY

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TECHNOLOGY

A&O

Nothing but 'Net

Carol Ptak, PeopleSoft's manufacturingindustry strategist, talks about Internet architecture, technology that makes money for both the customer and the vendor, and Post-it notes. Page 32



FUTURE WATCH

The Web's Next Leap

With the Semantic Web, Tim Berners-Lee, the inventor of the World Wide Web, leads the drive to infuse intelligence into his creation and open the door to new services. Page 34

SECURITY MANAGER'S JOURNAL

The Battle Against Pornography Continues

When Vince Tuesday looks into automated mail filtering, he finds that one vendor's pornography-detection software works better than he expected. Page 35

ENTERPRISE SEARCH ENGINES IMPROVE PRODUC-TIVITY BY ALLOWING SEARCHES ACROSS DISTRIB-UTED. DISPARATE DATA SOURCES. BY DREW ROBB

NTRANET PORTALS can offer a sinwhat they need among those thou-

gle point of access to all of a company's documents, but employees may still waste time trying to find sands - or millions - of documents. By interpreting user queries, searching across different data stores and presenting the most relevant results, enterprise search engines (ESE) simplify the task of finding the right information in the right context, regardless of the source. Search-and-index technologies are

built into many applications, but they let you find data only within the associated application and can't hunt through the many data repositories an organization might have. ESEs typically search both structured and unstructured information in many different formats and across all the devices on the corporate network.

documents on our intranet," he says. The Woodlands, Texas-based oil company installed Vienna, Va.-based Convera Corp.'s RetrievalWare to index and search its content repository. Anadarko's ESE indexes all of the company's SOL databases, its intranet, Windows file-server directory structures and everything stored in its content management system from Pleasanton, Calif.-based Documentum Inc., as well as several online news sources. Downing estimates that the engineering group now saves 78,000 hours annually by using the new search functions.

Bag of Tricks

ESEs use a mix of technologies to find the right result, and the products continue to improve. "A lot of the technology has been around for a while, but we are now starting to see practical applications . . . in the business realm," says Laura Ramos, an analyst at Cambridge, Mass.-based Giga Information Group Inc.

ESEs have the same core elements as Internet search engines: They spider enterprise content (locate documents by following hypertext links), index it and

Continued on page 28



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Continued from page 25

present it in response to user queries. However, the indexes can be quite large. Washington-based law firm Dickstein Shapiro Morin & Oshinsky LLP has nearly 1,000 employees and several million documents: 2 million managed with Fulcrum KnowledgeServer from Hummingbird Ltd. in Toronto and millions more that it accesses using specialized litigation software. The firm's database includes files saved as Word and Word-Perfect documents, as well as PDFs. The firm also has content in its proprietary CRM database and in documents in still more formats received from clients and litigation opponents. Since the attorneys need to do word-proximi-

ty searches, the index required by the search engine adds 60% to the total document store size, says Keith Berkland, the firm's application development manager.

After the initial spidering and indexing, search engines use various techniques to determine a document's relevance (see box).

"The first generation of OUR INTRANET. search engines is about the mechanics of getting a lot of stuff into the index," says Ramos. "The second is. How do I un-

derstand what the users' intentions are and more proactively deliver content they are looking for?"

"The main problem we were running into was the relevance of search results," says Brad Hochhalter, director of the Permanente Knowledge Connection, the clinical library site of Kaiser Permanente Health Plan Inc. in Oakland, Calif. "With medical knowledge, there is a lot of ambiguity for what terms mean and a lot of synonyms, so it is difficult to quickly bring up relevant material for the clinicians.'

The site provides the health maintenance organization's 11,000 physicians and 50,000 support staffers with access to nearly 40,000 internal documents, the content of more than 170 medical journals, plus textbooks and other content.

Hochhalter says search software from Verity Inc. in Sunnyvale, Calif.,

was returning unsatisfactory results, and users were abandoning searches.

"We could tweak the algorithms with the Verity engine, but it becomes a crapshoot deciding which things to weight," he says, adding that tuning the engine "was very time-consuming and labor-intensive for us."

To improve the results, Kaiser spent \$28,000 to buy a search appliance from Google Inc. in Mountain View, Calif. The HMO installed the box in a rack at its secure data center in Corona, Calif. Hochhalter says installing the box required hooking up two cables and plugging them in. One staffer set up the basic search functions and tweaked the results over a few weeks.

The appliance soon produced significantly better results, but it does have one drawback: The Verity engine lets Kaiser set up external metadata to describe a document, whereas Google requires that metadata be embedded within each document. With Verity. Hochhalter can add metadata without

OUR ENGI-

NEERS, GE-

OLOGISTS

AND GEOPHYSICISTS

ABOUT 50% OF THEIR

TIME SEARCHING FOR

INFORMATION AMONG

WERE SPENDING

OVER 2 MILLION

DOCUMENTS ON

OF BUSINESS SYSTEMS

BOB DOWNING. MANAGER

ANADARKO PETROJ ELIM CO.

opening every document. Verity remains the corporate standard, but Hochhalter says Google is still the better choice for searching through clinical library papers.

Another option for finding the right information is to use a naturallanguage search engine, which lets users ask questions rather than search for keywords. San Diego-based LPL Financial Services (Linsco/Private Ledger Corp.) uses a natural-language search engine from iPhrase

Technologies Inc. in Cambridge, Mass., to deliver portal content to its 4,300 agents in 2,100 branch offices nationwide. The product delivered 60% relevant results out of the box, but LPL spent several months inputting company-specific terms and tuning the results, boosting the relevancy rate to 80%.

"Our goal in putting the tool on the portal was to deflect some of the calls that were coming into the call center over to the Web site," says Rochelle Putnam, senior vice president for LPL's service center. "But we are also finding that internal staff are using it to improve their consistency in handling queries and spend less time calling supervisors to get the answers."

In addition to providing faster access to the existing content on the portal, LPL staffers use iPhrase to improve

TECHNIQUES FOR TUNING SEARCHES

Here are seven ways to improve search-result relevancy:



"DISAMBIGUITIZATION." A single word can have many meanings, so the ESE must be able to distinguish between them. If the person searches for the word plane, is he looking for an airplane design or a tool to smooth wood?



MORPHOLOGY. The search engine must understand how a word is used in the query sentence. It must be able to discern the difference between "when leaves fall" and "when he leaves this fall."



SYNONYMS, When searching the word plane, the ESE should recognize that documents containing words such as jet, airplane and 747 may also be relevant.



VOTING. Many search engines include a feedback mechanism that improves searches by letting users rank the usefulness of the results.



HUMAN REVIEW. Search engines can be tuned to the user organization's business needs by reviewing search results and adjusting them to improve relevance.



CONTEXT AWARENESS. The ESE may analyze the type of user and application at the time of the search. In a criminal database, for example, searching the word flight might first bring up people who jumped bail, whereas the same search in a corporate travel database would pull up airline schedules.



PERSONALIZATION. The ESE might weight results based on assigned or survey preferences for individuals or workgroups or by learning preferences over time based on the types of answers the person clicks on in response to a guery.

that content. Putnam says they can view the questions brokers ask on a daily basis and see if the site has the content they need. If not, they can create content and add it to the site.

"We take those queries and throw them at the search tool and see what it returns," Putnam explains. "This helps us tune the content and will enable us to drive some of the content development." LPL also uses queries to ensure that the FAQ page contains the answers to the questions that are asked most frequently.

Searching for ROI

Justifying an ESE purchase requires showing productivity improvements, but that can be hard to calculate when the savings are measured in minutes or seconds saved here and there throughout the day. "The return is very specific to the individual business needs, and there is no measurement that works globally," says Giga's Ramos.

Downing was able to justify the cost of Anadarko's system by demonstrating huge time savings in its engineering department. The company also saved 700 man-hours recently when searching through 10 years of e-mail records to produce evidence in a legal matter. LPL measures the return on investment by calculating the reduction in calls coming into its service center. But for Kaiser and Dickstein Shapiro, the payoff comes from keeping their highly paid doctors and lawyers happy by helping them work faster.

Although those results are largely anecdotal, Kaiser's Hochhalter says he does have one measure of savings. "The main ROI is that I have a highfunctioning search engine and I am spending one-fifth of what I was spending before. Now I can put those IT dollars somewhere else," he says.

Ultimately, ESEs have the biggest return where users are well educated doctors, attorneys, brokers, engineers - and where a large number of documents must be searched regularly. In organizations with fewer documents and lower skill levels, analysts say the search engines or directories that come with operating systems and applications may be good enough.

Robb is a freelance writer in Tujunga, Calif. Contact him at drewrobb@ attbi.com.

EMBED INSTEAD

A search tool embedded in the Ford Learning Network portal matches courseware to employee needs:



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802.11g Speeds Ahead of

Outlook: Promised advantages of 802.11g wireless LAN devices won't make a lick of difference in most companies, but you'll probably end up buying it anyway. Here's why. By Robert L. Mitchell

wireless LAN standards might look like an alphabetic soap opera. PC cards and access point hubs based on the llMbit/sec. 802.11b WLAN standard were just moving into the mainstream last year when vendors introduced the 54Mbit/sec. technology known as 802.11a. Now vendors are offering a third alternative, 802.11g, which they claim delivers 802.11a speeds over longer distances, while supporting backward compatibility for 802.11b devices - something 802.11a technology failed to do.

But don't rip out that 11b infrastructure, users and analysts say. PC cards and access points using 11g are still immature and provide few real-world benefits today. By this time next year, though, you'll probably end up buying it anyway because the technology will be built into most hubs, or access points.

The benefits of 802.11g derive from the limitations of its two predecessors. Released first, 802.11b uses a transmission technology called dicess point supports up to llMbit/sec. over three channels in the 2.4-GHz frequency range (see

table). But the technology has a few drawbacks. Having only three channels increases the likelihood of cochannel interference between neighboring access points. And, as with all WLAN technologies, actual throughput is at best only about half the published data rate and drops as distance and the number of users per access point increase. WLANs also face interference from microwaves, mobile phones, Bluetooth devices and even Pentium processors operating in the relatively crowded 2.4-GHz band.

With its higher bandwidth (best case of about 26Mbit/sec.) and up to 13 channels (with 11 more likely to gain regulatory approval in the next two years), 802.11a is a better choice for ar-

eas with a high density of users or for applications that require higher data rates. It operates in the less crowded 5.2-GHz frequency band, but it has a shorter range, and its modulation technique, called orthogonal frequency division multiplexing, or OFDM, won't support 802.11b devices. To support both lla and llg client types, corporations must buy more expensive, dual-mode access points.

As for 802.11g, it addresses the backward-compatibility issue - sort of. It adapts OFDM to allow 54Mbit/sec. operation in 802.11b's 2.4-GHz band,

rect sequence spread spectrum, or DSSS. Each ac-D-Link's PRODUCTS DWL-7000AP a/b/g access point sells Vendors Offer G in a Flash Devices based on 802.11a got off to a slow start last year, in part because only one vendor offered a chip set and the Wi-Fi Alliance wouldn't certify Atheros Communications' design until a competing design was available to test against. This time around. Atheros' AR5001X faces competition from Broadcom D-Link Corp.'s 54g and Intersil Corp.'s Prism GT chip sets, with additional designs from Cisco Systems Inc. and Intel Corp. in the

works. Early products are already in retail stores.

Most 802.11g access points and cards now shipping suffer from two big drawbacks: They're typically consumergrade devices that lack enterprise-class manageability features, and all are based on a draft specification that will require device driver, firmware and/or flash memory updates when the final specification is ratified - and that won't happen before the summer. "We're probably looking at July," says Brian Grimm, a spokesman for the Wi-Fi Alliance. His group will begin testing products shortly thereafter, but the first products carrying Wi-Fi interoperability certifications aren't likely to arrive much before late summer.

Devices based on 802.11g sell for a premium of 50% or more over 802.11b devices, but vendors say that should drop to 10% or less by next year as shipment volumes increase. Early 802.11g cards and dual-mode 802.11a/g hubs are available from D-Link Systems Inc., Linksys Group Inc. and several others, but vendors of enterprise-class WLAN equipment are holding off until the 802.11g standard is final. In some cases, existing enterprise-class access points have

TECH SPECS Wireless LANs

	802.11	802.11b	B02.11a	802.11g
Maximum link throughput	1 to 2Mbit/sec.	19Mbit/sec. 5Mbit/sec.	54Mhit/sec. 26Mhit/sec.	54Mbit/sec.*
Frequency	2.4 to 2.4835 GHz	2.4 to 2.4835 GHz	5.150 to 5.850 9Hz	2.4 to 2.4835 OH
Transmission technology	DSSS, Frequency Hopping	DSSS	OFDM	OFDM, DSSS
Channels per access point**	3	3	13 (24 planned)	3
Date approved	1997	1999	1999***	2008 (projected

*802.11g hubs supporting 802.11b clients must run in protected mode, which can cut throughput by as much as 40%, according to Atheros Communications.

**Number of nonoverlapping channels supported.

***Both 802.11a and b specs were approved at the same time, but because of the complexity of 802.11a, b products shipped first. Volume shipments of 802.11a products didn't begin until 2002.

while supporting 802.11b devices. "It gives you three more channels of 802.11a," says Rich Redelfs, vice chairman of WLAN chip-set maker Atheros Communications Inc. in Sunnyvale, Calif. But does that matter? Probably not, he says, because most corporate uses don't yet require the bandwidth.

"We're having this technology burst that is delivering technologies in excess of demand," says Ken Dulaney, an analyst at Gartner Inc. That's certainly the case at Embarcadero Systems Corp. in Alameda, Calif., which uses pole-mounted 802.11b access points on its loading docks. "Range matters, while our bandwidth requirements are not high," says Chief Technology Officer John Montgomery.

been designed to be upgradable as organizations move bevond 802.11b. Proxim Corp. says it will release an 802.11g version of its Orinoco AP-600 small-business access point, along with an upgrade kit for its AP-2000 enterprise-class devices and 802.11g client card in the second guarter. A Cisco spokesman says the vendor will ship upgrade kits for its Aironet 1100 and 1200 access points "shortly after the 11g standard is finalized." Ron Seide, product line manager of Cisco's wireless networking business unit, won't say when the vendor will ship a/g access points and WLAN cards: Gartner analyst Ken Dulanev expects mature products to arrive by late 2003 or early 2004.

Holtsville, N.Y.-based Symbol Technologies Inc., which sells heavy-duty WLAN devices used in warehouses and delivery trucks, is even more cautious. Symbol Vice President Ray Martino says the vendor won't ship products until early to mid-2004, with PDA client support coming sometime thereafter. "Going forward, especially with those enterprises which are deploying wireless for the first time, g may have some promise for higher-bandwidth applications."

Montgomery says that in a few areas in the yard where workers tend to congregate, having higher bandwidth might be beneficial. The 802.11g standard promises higher bandwidth than 11b, with comparable range. But with current Ilg devices based on a draft specification and lacking Wi-Fi Alliance interoperability certification, the decision was a no-brainer: "We will pass on [802.11g] and use 802.11a," he says.

"If you're trying to put these in an indoor office space, range is not an issue," says Redelfs. Network administrators need to maximize bandwidth for each user. One way to do this is to place access points closer together, but that increases the likelihood of cochannel interference, he says. The best solution for 802.11b users in this situation is to move to 802.11a/b hubs. "The beauty of 802.1la is you have so many channels you don't have to worry about interference between access points," he says. Another option for 802.11a devices is to "dial down the power" in order to more closely group access points, he says. The IEEE is working on a standard, 802.11h, that will support adjusting 802.11a power levels and changing channels on the fly to avoid interference with other access points and devices operating in the 5-GHz range, such as radar. But that standard, also called Spectrum Managed 802.11a, is still in committee.

One area where 802.11g could eventually shine is streaming video, says Dulaney. But acceptable quality will require solidification of the emerging 802.1le quality-of-service draft standard, which has progressed slowly in committee. And while video streaming over a WLAN connection may work for home users, today's throughput rates still may not be enough to support it in a business environment, where many users share an access point, he says.

For now, Dulaney says, corporate IT shouldn't get too far ahead of the curve. "Buy b now and then switch over to buying a/g at the end of the year," he says.

COMPATIBILITY

Why Faster G Means Slower B

Got 802.11b? If so, installing 802.11a/g access points will actually slow throughput rates for existing clients and throttle back the performance of newer 802.11g clients as well, vendors and analysts say. How big an impact will this have at the individual client level? The final answer won't come until sometime in 2004, once more mature, second-generation devices arrive and enterprises begin field-testing products.

The performance issue arises from the way in which the 802.11g standard provides for backward compatibility with 802.11b devices. While 802.11g access points can communicate with both client types over the same frequency band, each uses a different communication protocol. Since a and b devices can't see each other, the default collisionavoidance scheme for managing who gets to talk doesn't work. To solve that, 802.11g access points supporting mixed clients go into "protected mode" and coordinate traffic using a request-based protocol that adds to network overhead. "You're running two different protocols and time-sharing them," says Atheros Vice Chairman Richard Redelfs.

The design favors 802.11g clients, but throughput for both clients is degraded, he says. "We get frustrated when people say g is backward compatible and as fast as a. If you want to be backward compatible, you're not as fast as a," he says.

Vendor tests of protected-mode performance vary. Tests by Intersil Corp. and Atheros show that rate declines could be 40% or higher in some situations. But those aren't real-world tests. Gartner analyst Ken Dulaney expects the degradation of throughput to the client in the range of 10%. "You will slow it down a little bit," he says, adding that he doesn't think most users will notice. "The bottom line is it doesn't matter." he says, because most clients aren't constricted by bandwidth.

Redelfs is less optimistic. "If you're concerned about bandwidth [for 11b users], you're much better putting an a/b access point up, because you won't touch the b users at all." he says. Alternately, users can force access points to run in 11g mode only. That's technically out of specification and leaves no arbitration for b and a nodes, so collisions will increase with network traffic loads. But devices will probably still be interoperable, Redelfs says.

The throughput limitations of protected mode are also likely to decrease as more mature designs appear, Redelfs claims. Initial 802.11a chip sets, for example, fell short of expectations. Second-generation designs have fared better. "We've dramatically improved the range and throughput of a," he says. He expects similar gains in future 802.11g designs. "There are still huge advances we can make in range and throughput," he adds.

Nothin

PeopleSoft's chief manufacturing industry strategist tells why her company has bet on a pure Internet architecture. By Tommy Peterson



CAROL PTAK is in the thick of PeopleSoft Inc.'s efforts to transform itself from, as she puts it, "that HR company that, oh, by the way, does some supply

chain" to a major player in ERP and analytics software. Ptak learned manufacturing from the ground up, starting out as an assembler on a plant floor. From there, she went on to plant management and then established her own consulting firm before joining IBM's worldwide ERP solutions group. In addition, in 2000, Ptak served as president and CEO of APICS - The Educational Society for Resource Management. She joined Pleasanton, Calif.-based PeopleSoft last year and now has worldwide responsibility for the company's manufacturing industry strategy across its entire product line.

Ptak recently spoke with Computerworld's Tommy Peterson about how her company and others are responding to customers' needs.

What sorts of technological issues do you see PeopleSoft having to address? I see it from two sides: There's what customers tell us they need, and then there's the flip side. Take the example of Post-it notes - which is, until it comes out, customers don't know they need it. Post-it notes were really a disruptive change, albeit not something that changed the world. But still, they weren't something that somebody went to 3M and said, "You know, we really need a little piece of paper that's got glue on the back that sticks but doesn't stick." But after 3M developed it, everybody went, "Oh, gotta have that."

So the job is really twofold — first, listening to what customers are saying and translating that into changes. The other half is looking at what we've got and helping our customers understand what's there.

So, what are users saying they need right now? People are going for anything that will increase revenues or decrease costs with some level of surety that that's going to happen in the very short term. It's [which] technology is going to address a real business issue for them.

Users don't think of the kind of big systems that PeopleSoft and its competitors sell as quick fixes. It depends on the size of the company. What I'm seeing is that the big companies out there are buying point solutions. They're buying something that fixes a very finite er companies, the under \$2 billion companies, are

scope of issues they have in the company. The smalllooking for full-suite integration projects, but they're



Title: Vice president of industry strategy, high tech and industrial manufacturing

Age: 46

Accomplishments: Ptak is the author of three books, most recently contributing to Necessary But Not Sufficient by Elivahu Goldratt (with Eli Schragenheim). She started a consulting firm, Eagle Enterprises, and then joined IBM's ERP solutions group. Ptak is also a past president and CEO of APICS, an influential industry consortium for manufacturers.

looking for them to be completed in under a year. The expectations are of time to implementation of six to nine months. So it's a big project for that company, but it's also very quick. The old 18- to 24-month project times just don't hold anymore. They need to have whatever it is you're going to do up, running and producing the return on investment within a year.

Was that a tough transition for PeopleSoft to make? No, actually. Our architecture allows you to deploy more quickly than our competition, because it's a pure Internet architecture. I was with a customer recently that was looking to outsource some of their manufacturing to Mexico. One of the things that really resonated with them was that because of our pure Internet architecture, if something happened in Mexico, they didn't have to send a tech across the border in order to fix something that's running on the client machine. All you need is a browser. With the security issues in going across the border, if a tech has to go over there on what's a 20-minute job, he's going to be gone all day. So that was a big savings for them right there; it was a big determinant of how much tech support they were going to have to add. Folks recognize that the Internet is the future, and I believe we're the only ones that have a pure Internet architecture.

What kinds of advantages do you see as inherent in an Internet-based architecture? First, there's a big difference between Internet-enabled and pure Internet architecture. Pure Internet architecture means that this technology was designed from scratch to run over the Internet. There is absolutely no code on the client.

Think about what's happening in the industry today and how companies have to collaborate much more closely with their customers. They need to get information out to their customers and do it in such a way that it's very easy and inexpensive for the customer to receive that information. What's easier than giving somebody a user ID and a password for a Web site? There's no integration and training of the supplier.

When our customers say they are Internet-enabled, it means that you're having to download code; it means thicker clients. For our customers, you look at the number of PCs that you would have to upgrade. And they ask, "How big of a client do I need to run the code?" With ours, you only need a browser. If you've got older machines, we say great - you don't even have to upgrade all those machines. All you need is a browser.

What does the real-time enterprise mean to your company and your customers? We see real time as meaning that there is no time lag between an event and the implication of the event. I need to know as soon as something happens in my supply chain that I've got a problem. I need to know right away when I have an opportunity with a customer.

What's the capability for the real-time enterprise right now? It varies. It always gets down to how many integra-

tion points are there at the customer site and how often do they want them refreshed. We're living in a very hetero-

geneous world.

MORE FROM PTAK

PeopleSoft's Carol Ptak elaborates on the shifting technology markets: QuickLink 37763 www.computerworld.com

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The Web's Next Leap

Data integration via the Semantic Web. By Patrick Thibodeau

NFORMATION TECHNOLOGY managers are familiar with the concept of the Semantic Web, even if they haven't heard the name before.

The Semantic Web is about giving users the ability to manipulate, connect and associate Web resources in new and powerful ways. It's a capability similar to that of the corporate workhorse, the relational database.

The Semantic Web is about taking the relational database and "webbing it," as Tim Berners-Lee, the inventor of the World Wide Web, described it at a recent forum of the National Science Foundation in Arlington, Va. The Semantic Web will allow businesses to manipulate external, heterogeneous Web data in much the same way they do internally, he says. But its most immediate use may be as a tool to solve data integration problems.

The Semantic Web is intended to infuse meaning into the Web and make data "machine-understandable." It relies on the development of standards and "ontologies," the vocabularies that systems need in order to associate and connect data across multiple databases. These ontologies would be linked to documents and other Web resources, giving computers the ability to infer relationships among these information sources.

The Semantic Web would allow manipulation across multiple, heterogeneous databases. This capability could, for instance, allow an electronic airline reservation service to automatically interact with a personal calendar program to arrange a flight that fits a user's schedule, even if there was no pre-established interface between the two pieces of software.

But accurately forecasting the kinds of services that the Semantic Web will deliver is as difficult as it was to anticipate at its inception what the Web might become. "In the beginning, I think it was very unclear what the dominant business model would be,"

says Ora Lassila, a research fellow at Espoo, Finland-based Nokia Corp.'s Nokia Research Center. Similarly, the kinds of services that may emerge from the Semantic Web remain a "big question." he says.

But for corporations, the immediate value of the Semantic Web may not rest in using it for new services, but rather as a means of integrating data in heterogeneous environments. And the concepts and standards are sufficiently developed to allow that now.

Eric Miller, who heads the World Wide Web Consortium's (W3C) Semantic Web effort, believes it's the Holy Grail of enterprise integration. "We're talking about really reducing the turnaround time of data integration," he said.

The Cambridge, Mass.-based W3C, which is headed by Berners-Lee, is leading the effort to develop Semantic Web standards, such as the Resource Description Framework (RDF), the standard used for expressing ontologies, and XML, the standard for creating customized tags for the exchange of data between heterogeneous applications.

Ontology Hurdle

A more difficult aspect of building the Semantic Web is the creation of ontologies. This process requires efforts by diverse communities, such as the medical, insurance and finance industries, to develop common vocabularies that systems will use to recognize what's in a Web document.

Fortunately, creating ontologies doesn't require a global coordinated effort. If words are used differently, such as "title" in insurance vs. the "title" of a book, services will be able to map those differences to allow interoperability.

"The Semantic Web is very much a future-looking vision," says Ronald Schmelzer, an analyst at ZapThink LLC in Waltham, Mass. "Trying to get computer systems to not only be able to communicate with each other, but also able to understand each other is traditionally a very difficult problem."

Indeed, developing the Semantic



THE SEMANTIC WEB

Takes the relational database and "webs it."

Infuses meaning into the Web and makes data machineunderstandable.

Will allow the integration and manipulation of external, heterogeneous Web data.

Requires the development of standards and ontologies.

Web will take years, says Jas Dhillon, president and CEO of Celcorp Inc., a start-up company in Santa Monica, Calif., that has used RDF and ontologies to integrate applications.

"The Web is kind of stuck in terms of where it is right now, and if it is going to take the next step and enhance productivity and use, it has to become intelligent," Dhillon says. "We are betting that Tim Berners-Lee will succeed."

And if Berners-Lee does succeed in convincing software vendors to invest in Semantic Web applications, businesses will have a new way of integrating databases and applications, instead of using the traditional method of building interfaces one by one.

Celcorp uses ontologies built on top of RDF in its "semantic learner," which can create new "meta-applications" by extracting features from multiple existing applications. It analyzes what users are doing in the existing programs, how they navigate, what actions are taken and what data is used. It then puts that information in a knowledge base.

In the next step, a "reasoning engine" builds the new application. It does that by allowing users to specify goals or results they want to accomplish. Using RDF, the reasoning engine looks across the knowledge base to see if all the pieces are there to assemble the process.

In the third step, code is generated and executed based on the functions stored in the knowledge base.

Semantic Web proponents predict that more companies like Celcorp will emerge in the near term, offering similar services and new tools for applying semantic concepts to existing business processes.

Berners-Lee says technology managers can prepare for this future by asking their application vendors whether they're using RDF in their software development.

The Battle Against Pornography Continues

A test of a British vendor's e-mail filtering tool proves to be surprisingly successful. By Vince Tuesday

UR SECURITY TEAM'S goal is to provide the company with freedom from fear. Management is afraid of pornography, afraid of the bandwidth and time wasted on it, and even more afraid of lawsuits from offended staff. I don't think the problem within our company is particularly bad, but because we take every issue seriously, we've spent some time ad-

I see four ways for pornography to get into or out of our building: on physical media, over Web connections, by way of e-mail attachments and over peer-to-peer file-

sharing networks.

dressing this.

We do our best to ban peerto-peer networks. But there's not a lot we can do about physical transport, considering the latest solid-state storage devices are the size of my thumb. But if anyone copies porn from such a device onto a PC, we'll find it eventually on the file shares or local drives.

We also do reporting on Web browsing activity. That has allowed us to track down the small number of people who view and download pornography over the Web.

That leaves e-mail as the last open door. We've added a few filters for particularly dreadful phrases to try to stop offensive spam, and our new antispam service should help filter out porn too. But there's always the risk that the e-mail service will be used to send and receive objectionable material, particularly in file attachments.

We'd like to find a way to block incoming e-mails that include pornographic image file attachments. We already use New York-based Message-Labs Inc.'s SkyScan antispam and antivirus services, and the managed service provider offers a service it claims can also protect us against pornographic pictures. But it has been diftip ictures. But it has been dif-

ficult to arrange a test of that service.

Based on information on Message-Labs' Web site, it appears that the company uses First 4 Internet Ltd.'s Image

Composition Analysis (ICA) software to perform this service. By chance, we were recently approached by a reseller of Banbury, Englandbased First 4's product.

I have a cynical view of the likely effectiveness of these tools. It's difficult enough for humans to decide about pornographic images, so it must be extremely hard for software to do it. This reseller, however, was willing to let us try ICA on our systems for 10 days.

It also offered us five CD-ROMs full of images to help us test the software. They con-

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It's difficult enough for humans to decide about pornographic images, so it must be extremely hard for software to do it. tained images that included no porn, some porn, a whole lot of porn and total porn. One CD the reseller offered contained images graphic enough to frighten Larry Flynt.

The graphic nature of the material aside, it isn't a good idea to test a product by using the vendor's test data. Even if it goes well, you can't trust the results. So I politely declined the offer of free porn on CD.

Instead, we ran the tool against a week's worth of saved e-mail attachments — more than 6,000 of them — received by employees at our company. It took a few hours to process but required, on average, less than one second per attachment when run on a low-end desktop machine.

Avoiding False Positives

We aren't too bothered by false negatives, where the software misses image files that should be flagged as porn. Our intent is to catch persistent offenders, so even # 50% hit rate will work. But we're very keen to have a low false-positive rate. We can't risk falsely accusing innocent staffers, so unless this software is very accurate, we'll have to check everything it flags.

When we performed our test, the software identified about 100 questionable images, only nine of which were legitimate e-mails that had been misclassified. Given that this was incoming e-mail from the Internet, and considering the high volume of attachments we get, it wasn't that bad a number of offensive e-mails.

Most false positives were for pictures of babies; these images tend to have a lot of skin tones. There were a few very weird false positives. A picture of a sunset, for example, was apparently pornographic. But

we can live with this error rate, particularly right out of the box. With a little tuning, the software should run well.

And the false negatives? A manual search of the files classified as not pornographic revealed only a tiny number of offensive images, and most were montages of smaller images that the software understandably had problems with.

No Easy Solutions

So, if you're a porn hound and want to bypass this software, what can you do? Not a lot. It looks inside Word documents and PowerPoint files and will check compressed files as well. Colorblind offenders can rest easy, however, because the software can't handle monochrome images.

Overall, I was pleasantly surprised with how well the software worked. Our next step is to decide if we'll use the upstream filtering at MessageLabs or install the software on our e-mail management servers. (We use MIMEsweeper, from Bellevue, Washbased Clearswift Ltd.)

Whichever way we decide to go, it won't be long before our incoming and outgoing e-mail is being scanned by the perverted gaze of ICA. Even if we buy the service, though, I plan to purchase a copy of the software so we don't have to manually trawl through hard-drive images during forensic investigations. •

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince. tuesday@hushmail.com, or join the discussion in our forum:

QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to Computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

Information Security Policies Made Easy Version 9, hy Charles Cresson Wood; NettQ Corp., 2002.

One thing that stands out about this book is the price: At \$795, it's just over a dollar a page. But it's actually worth it.

If you need a well-thought-out policy for your company, you could hire consultants that cost well over \$795. Or you could buy this book and tailor the policies in li. It covers everything you need and comes on a CD-ROM with a license to use the policies in your organization.

- Vince Tuesday

Tripwire Manager, Server Upgraded

Tripwire Inc. has announced Version 4.0 of Tripwire for Servers and Tripwire Manager. The Portland, Ore,-based vendor says the server version of its integrity-checking software can now identify who has made internal system changes Tripwire Manager adds features that ease the process of ostablishing baselines against which to compare systems and the process of verifying and approving mass software updates. Both products will ship mid-May. Tripwire Manager pricing will start at \$6,995; Tripwire for Servers will sell for \$595 per server.

Most-Hacked Industries

The top five industry sectors targeted by attackers in the first quarter of 2003 (percentage of all attacks):

Retail	35%
**************	*****
Financial services	11.5%
************	*****
Health care	9%
**********	*****
Manufacturing	996
**************	******
Federal and local gov's	t 1%
SOURCE INTERNET SECURITY SYSTEMS INC., ATLANTA, APRI	L PORTS
Manufacturing Federal and local gov's	996 t 1%

BRIEFS

Maxtor ATA Drives Work on Intel Chips

Maxtor Corp. announced last week that its Serial Advanced Technology Attachment (ATA) hard drives have passed lab testing for compatibility with Intel Corp.'s new 875P Serial ATA chip set with built-in RAID capabilities. According to Milpitas, Calif.-based Maxtor, the proven compatibility provides a variety of options for building PC, RAID and near-line storage arrays.

Vendors Team on Disaster Recovery

EMC Corp. in Hopkinton, Mass., Legato Systems Inc. in Mountain View, Calif., and Nortel Networks Ltd. in Brampton, Ontario, last week announced a pretested disaster recovery/business continuity architecture that's designed to connect multiple data centers and automatically reroute transactions to alternative sites, with no need for manual restore or restart procedures. The pretested technology includes EMC's Symmetrix and Clariion arrays, EMC's Symmetrix Remote Data Facility, Legato's Automated Availability Manager software and Nortel's **OPTera Metro 5200 Multiservice** Platform.

Supermarket Uses Elogex for Logistics

Publix Super Markets Inc. has signed a multiyear contract to use Charlotte, N.C.-based Elogex Inc.'s OneNetwork system. Lakeland, Fla.-based Publix will use the system across its distribution network to link its operations with carriers and manufacturers on a unified platform. The technology will provide load tendering, online appointment scheduling, freight procurement and payment. Publix said the system will help it save money on transportation and avoid out-of-stock merchandise by helping the chain better manage time-sensitive products, including perishables, promotional items and seasonal stock.

TOMMY PETERSON

Getting Real About Real Time

HE ALMOST DEAFENING BUZZ these days around the "real-time enterprise" is drowning out important practical questions about what the term *real time* really means and the nature of real time's impact on business processes.

For example, a few weeks ago, I heard from Scott Hicar, the CIO at consumer electronics company Maxtor Corp. His company has been using Data Integrator software from Business Objects to pull data from its various applications into an Oracle data warehouse. Maxtor executives were then pulling real-time reports from the data warehouse using Business Objects' WebIntelligence - at least that's what they were doing early in the implementation.

The problem was that all those realtime reports were slightly different, since they had been produced at different times. So executives were spending a lot of their meeting time comparing reports and puzzling over data rather than making decisions, Hicar says. Once Maxtor recognized the root problem, the company easily solved it by tweaking the software so that it pushed reports to decision-makers at several set times throughout the day.

"Now people spend time acting on the information rather than questioning its validity. That was our early learning about the nature of real time," says Hicar. "Every business and business process has different criteria about how timely timely is."

Constantly updated, instantly available information is unnecessary for some business functions — and sometimes it can be downright detrimental. That's because human decision-makers are still at the center of most business processes, and they need more than a stream of the most current data.

Promoters of real time sometimes for-



get that the notion had its beginnings in applications that were designed to eliminate the need for people to make decisions. Real time started out as a way to say that the response of the application to a particular event had to be both correct and timely, with timely usually meaning a very short time constraint. Early realtime applications were mostly designed for automated technologies like airplane navigation systems

and missile-guidance systems or devices such as cardiac pacemakers.

The program controlling Uncle Ned's pacemaker not only has to trigger the correct electrical impulse; it also has to trigger it within a very precise time frame, or Uncle Ned is in big trouble. Likewise, the guidance system in a Tomahawk missile must respond to deviations in the missile's trajectory within a fraction of a second, or the corrections it makes will be useless to spare unintended targets.

Helping People Do Their Jobs

Clearly, some things can be done more effectively by computers than by people, and those tasks were the first prime targets for real-time applications. And the faster the information flows through those applications, the better.

But the IT systems in place at most companies are there to help people do their jobs, and people make better choices when they have access to context and analysis, which are pretty tough to serve up instantly.

The rise of increasingly more sophisticated real-time analytical tools may help, but there still remain the major issues of cost, data quality and the readiness of companies to make productive use of the analysis (see "Real-Time Data: Too Much of a Good Thing?" QuickLink 36917).

Smart technologists like Hicar know that their job isn't implementing software that makes decisions, but rather it's "presenting information to human experts to make decisions."

And those humans, expert or not, also create the cultures within organizations that will need to be changed to accommodate real-time information exchange. The utopian vision of the nimble, collaborative real-time enterprise with information flowing freely and at incredible speeds between departments is inspiring. But it ignores the work that needs to be done to tear down those walls and resolve the ongoing turf wars in most companies.

Gartner/G2 analyst Kraft Bell points out that the real-time enterprise is often mistaken for a business strategy, when it is in fact merely a "competency."

There's no doubt that gaining that competence and having high-speed access to information can make a company more competitive, as long as it chooses the appropriate spots to use real-time applications. Otherwise, it's like buying a Lamborghini to get yourself to the local grocery store and back.

As the economy has contracted, companies have felt the need for more visibility into their supply chains in order to decrease inventories, better track performance and sales opportunities, and have more information with which to make decisions. Implemented carefully, real-time applications can help with all of these business problems.

The key is to avoid unrealistic expectations for real-time applications and to take time to prepare your infrastructure or organization for them. Otherwise, you're just making it easier to make bad decisions more quickly.

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MANAGEMENT

Tight Lips

Companies have typically provided little information about former employees for fear of being sued. But some hiring managers are finding ways to dig deeper into the backgrounds of job candidates.

Page 39



Pacing the Unthinkable

Many companies prepare only for the kinds of crises they've encountered in the past, not for the disasters that are likely to strike today, says Ian I. Mitroff, who co-wrote a recent Harvard Business Review article on the subject. Page 40

Readying for a Trip Offshore

Consider the same potential consequences for offshore outsourcing as you would for any outsourcing decision, warns columnist Bart Perkins.

Page 42

The Best of Both Shores

Slashing labor costs while retaining control over IT staff and project quality is at the heart of offshore insourcing. By Julia King



OUTSOURCING WATCH 2003

COST PRESSURES top just about every company's list of reasons for sending greater amounts of IT work offshore. IT labor rates in

India, the Philippines and elsewhere are as much as 70% lower than those in the U.S. As such, they're simply too compelling to ignore, IT executives say.

But equally compelling is the potential of losing control over foreign technology workers and the quality of IT projects based thousands of miles away.

Allstate Insurance Co., Avon Products Inc. and Global Exchange Services Inc. (GXS) are among a small group of U.S.-based Fortune 500 companies that have set up and staffed their own IT centers in lower-cost countries like India, Ireland, India and Hungary to address the twin issues of cost and control.

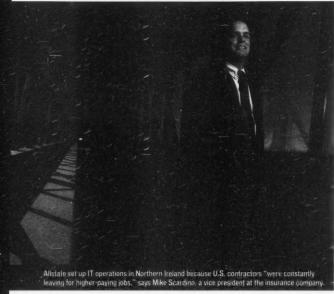
In this offshore-insourcing model, foreign IT workers aren't contractors but employees of the U.S.-based companies. They receive the same training, use the same software development tools and adhere to the same business processes as their IT counterparts in the U.S. The big difference is that they're paid a lot less. For example, for every \$100 that GXS spends on an IT employee in the U.S., it spends just \$30 on an employee in Bangalore, India, where it employs 230 IT workers. "Manila is even less expensive — perhaps 30% to 40% less than India," says Tasos Tsolakis, senior vice president of global technology at Gaithersburg, Md.-based GXS.

By shifting about 70% of GXS's internal IT projects and 40% of its IT work on customer-facing applications to offshore centers, Tsolakis estimates that he has saved about \$16 million a year for the past three years. At the same time, he says, GXS has been able to ensure quality and meet software delivery deadlines, because the offshore employees and projects are managed using the same Six Sigma processes that the company, a former business unit of General Electric Co., applies in the U.S. Among large U.S. companies, GE is one of the best-known proponents of Six Sigma quality-control processes.

Consistency Across Continents

"Clearly, the labor rate is the big driver [for hiring IT employees abroad], but you need to treat them like your regular [U.S-based] teams. Every development tool and testing tool I have here, my resources in Bangalore have. It's critical that they feel a part of your team. They're first-class citizens like everyone else is," Tsolakis says, adding, "That's how you can really create synergies and optimize resources."

The company's 650 offshore IT employees work at



The Best of Both Shores

Allstate-owned facilities in Belfast and London-derry in Northern Ireland. The centers in those cities were set up in 1998 and 1999, respectively, as a result of the IT labor shortage in the U.S. caused largely by a crush of Y2k work and the then-thriving dot-com economy.

"We had an additional issue in that we had a large number of contractors working for us here in Chicago and they were extremely expensive. With the labor crunch and Y2k, we had a ratio of 50% contractors who were constantly leaving for higher-paying jobs," recalls Mike Scardino, assistant vice president for finance at Allstate.

Cost savings was one of the big advantages of hiring offshore employees, and it remains so. Allstate spends about 75%

less on contractors now than it did prior to setting up in Northern Ireland, Scardino says.

The company is also retaining critical business knowledge and intellectual capital that used to walk out the door with departing IT contractors. "In the insurance business, there's a tremendous amount of business knowledge that goes with programmers. You can't just bring somebody in who knows Cobol," Scardino says. "Now, the business knowledge stays with the employees. That's a huge benefit and a big driver in terms of our ability to maintain our existing applications and to develop new ones, because they know what they're talking about."

More Than Maintenance Work

Both GXS and Allstate launched their offshore operations with the intent of exporting primarily software maintenance work to foreign IT employees. But that soon changed. GXS's IT employees in India, for example, now work mainly on Web-based transaction management services and other software tools that GXS offers to its 60,000 retail customers. In Bangalore, staffers "don't want to do just support work," says Tsolakis. "You have to offer a continuous balance of work."

Scardino says Allstate's Irish employees work on everything from software program maintenance to application development projects. "We started with the idea that it would primarily be maintenance, but with the skills and abilities of the workforce we hired, we're able to do all different types of projects," he says. "As we speak, I'm expanding beyond IT to call centers."

Keeping U.S.-based IT workers informed of the company's plans for distributing various IT projects is a critical component of managing onshore/off-shore IT groups. "The U.S. teams ask, 'What's the fu-

Global Labor Pools

Allstate Insurance Co.

Headquarters: Northbrook, III.

- 650 IT employees in Belfast and Londonderry, Northern Ireland.
- IT work performed offshore includes software maintenance, new application development and call center operations.

Global Exchange Services Inc.

Headquarters: Gaithersburg, Md.

- 230 IT employees in Bangalore, India. Additional IT employee teams in Manila and Hong Kong.
- Offshore IT projects include development of Web-based services and software tools for retail customers.

Avon Products Inc.

Headquarters: New York

- 15-person Web development team in Hungary.
- Avon is considering hiring IT employees in Mexico and Argentina.

ture for me, and why should I stay if you're moving work offshore?" "says Tsolakis. "You need to give an overall direction and plan. It's important to address this upfront. If you don't do that, you end up losing some key resources that you don't want to lose."

Scardino and Tsolakis also agree that on-site management, preferably by a local national, works best at offshore regional IT centers. GXS's Bangalore facility is managed by an Indian woman who reports directly to Tsolakis. "We have a whole infrastructure, including an HR person in Bangalore helping with recruiting and a finance person. This is because it's important to mesh the local culture with the U.S. culture," he says.

For IT executives considering setting up and staffing an offshore IT center, Scardino advises that they first make "sure the economics of the local environment are sustainable, that there's talent, that there's a quality workforce and that those things aren't going to change." For all of these reasons, Northern Ireland was an ideal location for Allstate, Scardino says.

"Part of the success of being in Northern Ireland is also because people [in the U.S.] are willing and able to go there. Routinely, we have people on the ground, and the people in Northern Ireland are over here," he says. "There are travel costs, but relative to the economics, on a cost-per-hour basis, the travel budget is less than \$1 an hour [per employee] when you spread it across all of our programs."

That's one more item IT executives must add to their list of outsourcing considerations.

AROUND THE WORLD, BUT STILL IN-HOUSE

Avon began its offshore insourcing initiative in Hungary. To learn more about how the company did it, visit our Web site:





NFORMATION TECHNOLOGY managers and CIOs say that more than ever, fear of litigation is preventing them from giving out much, if any, detail on former employees who require references in order to secure new jobs. For several years now, companies that are fearful of lawsuits and that have official corporate policies in place have typically provided as

Recruiters and IT executives say it's difficult to get more than the start date, the end date and possibly the employee's title through official corporate channels. Some employers have even automated the reference process, says Andy Baker, human resources manager for IT recruiting at Allstate Corp. in Northbrook, Ill. "Certain companies

little information as possible.

make us dial a specific phone number and key in the person's name or code number to gain the dates of employment and nothing else," he says.

Corporate policy is one thing, but harsh reality is another. Hiring managers today have pressing concerns - such as system security and the cost of replacing less-than-stellar performers - that make it necessary for them to dig deeper for more information about prospective IT talent.

Increasingly, IT executives and corporate HR departments are turning to alternate, unofficial channels to screen the hundreds of thousands of IT workers who have been laid off nationwide and are available for hire. Some use the old, informal insider's network, chatting with folks at the job candidate's last place of employment to find out more about what he was really like as an employee.

Tasos Tsolakis, vice president of global technology operations at Global Exchange Services Inc. (GXS) in Gaithersburg, Md., says that when he needs to get the lowdown on a person he's considering for a job, he calls someone at the company where that person works. "It's pretty common for local IT managers to know other local IT people," Tsolakis says.

Other hiring managers use a combination of methods, such as conducting several rounds of in-depth technical interviews and testing candidates for their technical skills.

"Delta Technology uses a multiple-hurdle hiring approach, including third-party background checks as well as traditional and skill-based interviews," says Curtis Robb, CIO at Delta Air Lines Inc. in Atlanta. "This allows us to view candidates from a broad perspective, ensuring they possess the knowledge, skills and abilities required for the job."

Allstate receives an average of 600 electronic résumés a day, or up to 25,000 per month, and stores them in an internal. Web-based database. The company uses it to conduct searches using specific criteria, such as skills, programming languages and platform experience, to collect a manageable pool of job candi-

dates. Human resources then e-mails to each candidate a customized employment application that's designed to gather general information and specific experience-related details. "Based on the response to the e-mailed form, we hone down our list to a few targeted candidates," Baker says.

The next step is a phone interview to gather even more details, such as a candidate's adaptability, teamwork capabilities and flexibility. When the number of candidates is down to two or three. Baker conducts on-site interviews and collects information that he then gives to a third-party back-

ground-checking firm for verification of educational information and criminal history. "We also always ask permission from job seekers to check references in our online application," he says.

Outsource Your Screening

Third-party reference-checking and online database companies are doing brisk business these days, collecting personal information and delivering it for a fee to corporate employers. Industry analysts say pre-employment screening, made easier and cheaper via the Web, has been on the rise for the past several years. Companies such as ChoicePoint Inc. in Alpharetta, Ga., and The First American Corp. in Santa Ana, Calif., can verify identities and check details such as criminal records, automobile driving histories, former addresses, education and previous employment records. A December 2002 survey conducted by the Society for Human Resource Management in Alexandria, Va., found that more than one

quarter of IT managers agree that there has been greater screening of job candidates in the past year.

Dara Herbst, president of Certified Reference Checking Co. in St. Louis, says the biggest challenge for companies hiring IT workers is gauging the accuracy of each job candidate's technical skills. In some cases, it's difficult to gain verifiable references especially from dot-com companies that have gone out of business. Herbst and her father, Edward C. Andler, with David Sears, wrote the second edition of The Complete Reference Checking Handbook: The Proven (and Legal Way) to Prevent Hiring Mistakes (Amacom Books, 2003).

IT and other hiving experts offer ad-

vice on how to screen job candidates:

sonal, rather than corporate, references

for skills inflation.

checking service.

job candidates.

all résumé details to check

"Ask for verifiable information from the job candidate, such as a date of birth or Social Security number," says Herbst. Although it's illegal to force job applicants to provide such information on job application forms, it's vital to reference-checking, she says.

Red flags should pop up if a job candidate is unwilling or unable to supply verifiable information, such as a date of birth and employer references, Herbst says. While it's illegal to request date of birth on employment applications, this information is considered vital to verifying education and other details on a job candi-

date's résumé. Candidates may balk at first, but Herbst says most understand why this information must be collected.

Several people interviewed for this story said it's not wise to judge the large pool of IT job seekers as among the bottom 10% of performers, even though many companies have taken opportunities to cut poor performers. "Before, [GXS] had a policy that you [fired or laid off] 10% of your bottom talent. The reality is that in the past two years, we've moved a lot of top players, too," says Tsolakis. Most job cuts have occurred as GXS has moved an increasing amount of IT work offshore, he says.

CIOs and analysts say that despite corporate policies, they typically want to help job seekers who have earned their help. "If someone has performed well, possesses good skills and works hard, I'm always willing to serve as a personal reference," says Steve Schuckenbrock, former CIO at PepsiCo Inc. and Frito-Lay Inc. and now chief operations officer at The Feld Group, an IT consulting firm in Dallas.

When Schuckenbrock is doing the hiring, he asks job candidates for permission to speak with someone at their current or former employers. "If they can't supply that information, I know there's a problem."

But in the final analysis, there's no doubt that a catch-22 lurks in today's hiring process. Job candidates need to supply the names of former employers, yet those employers most likely can't give a reference because of company policy. So if you're a hiring manager, be tenacious and use what you can - thirdparty screeners, multiple interviews and thorough skills testing - to employ the best talent.

DePompa is a writer and editor in Germantown, Md. Contact her at bdepompa@aol.com.

How to cope when companies withhold references. By Barbara DePompa Reimers

Facing the Unthinkable

It's time for corporate crisis management to grow up



If you think you're prepared to handle crises in today's business environment, you may be kidding yourself. So says IAN I. MITROFF, professor of business policy at the Marshall School of Business at the University of Southern California and author of the forthcom-

ing book Crisis Leadership: Planning for the Unthinkable (John Wiley & Sons, 2003). Mitroff has found through surveys and interviews that many Fortune 500 companies prepare only for the kinds of crises they've encountered in the past, not for the disasters that are likely to strike today. He and co-author Murat C. Alpaslan address the implications of being unprepared in this month's Harvard Business Review. He talked with Kathleen Melymuka about the need for companies and IT departments to face the reality of new threats.

Why is traditional corporate crisis management no longer good enough? It's too limited. Corporations - or IT departments - tend to focus on crises they know about. That doesn't serve them well. It's not the crisis you know that will kill you; it's the one you don't know. There are all sorts of crises: economic, reputational, human resources. Organizations are susceptible to a wider array of crises than 30 years ago, and any one can be the cause or the effect of any other. Something in IT could trigger something elsewhere, or vice versa. Crises don't give a damn about the silos and walls we set up.

Your study found that some companies were prepared for crises and others were susceptible to them. What were the main differences between the two types of companies? Proactive organizations prepare for more crises than they have already ex-

perienced. In reactive companies, first it has to hit them, then they prepare.

How might a proactive approach play out in an IT group within such a company? Technical people tend to think in nice, neat boxes. In a company that is proactive, when you look at how crises happen, you realize that technology is operated by human beings. You look at how people make errors, how the best-laid security plans can be breached by error or omission or commission. You dialogue with other parts of the company to see how IT connects, how someone could get in even with best of security. When you have an internal crisis team, you use a mix of people - not just IT people in isolation. A mixed group comes up with richer scenarios. You

don't start with the assumption that it can't happen. You say, "This has happened," and work backward to find out how it could happen.

You learned that being prepared yields some surprising dividends, aside from better response. What are some of the payoffs? We found that over three years, on average, proactive companies had 22 major crises, and reactive had 33. The average return on assets for proactive companies was 6%; for reactive, it was 2%. Whether there's a cause and effect is unclear, but something is going on in proactive companies. They have different ethical values. They tend to follow "Do no harm to any single person." Reactive companies tend to do the right thing only if it's cost-effective. They're geared to the bottom line, but ironically, the proactives [are] more profitable.

Tell me about some of the types of calamities that might strike an IT environment. Natural disasters — earthquakes, floods — could affect anybody, and most companies think about that. Second are normal accidents that come about when complexity builds in the potential for an accident. In IT, complexity can lead to a glitch like Y2k. That's a normal crisis — an accident that's almost inevitable, but not intentional. Then you have abnormal accidents: Someone deliberately causing the accident. 9/11 was abnormal. Enron was an abnormal economic crisis because it was caused

by shenanigans. In IT, abnormal is where I intentionally go in as a terrorist and infiltrate or put in a virus.

Does IT have a role in averting crises? There are always early warning signals. IT can be part of a crisis signal detection center, to collect and filter information and send it to a central locale to connect the dots. In the Ford/Firestone crisis, Ford set up a unit to look for evidence of tire problems worldwide. But why didn't it have a permanent unit before that? IT could take the lead to set up systems to look for early warnings. The role overlaps with strategic planning — again, tearing down silos.

You've developed a very interesting tool to help managers face the possibility of abnormal crises. The wheel of crisis [see illustration] shakes up thinking with the idea of randomness. You spin it, and it lands on one category of crisis. Spin it again, and it lands on another. Then you have to come up with a scenario: If this happens, what do we do? And if both happen, what's the connection? How could one set off another? It's designed to force people out of traditional molds of preparing for the things they know how to prepare for. You have to broaden it and connect the dots.

You also suggest using "internal assassins." What would they do in IT? IT people would concoct a scenario that would do the most damage and take the longest time to find out. They might also look at how someone with a high-school education vs. a Ph.D. could sab-otage you. Then, what would you do to blunt it? How could you know this is beginning to happen? What is in your organization, culture, reward-and-punishment system that would make someone disgruntled enough to do this?

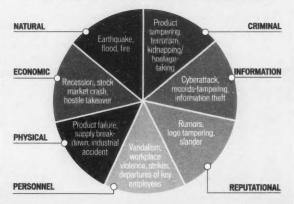
Crisis management is not a high priority for many companies, especially when budgets are strained. Why should companies spend now to thwart potential threats? The best argument is the cost of an Enron or Ford/Firestone. It costs \$2 million a year to start [a crisis management effort] in a Fortune 500 company. That's a drop in the bucket, and if you don't do it, you're betting the whole company. A crisis is virtually guaranteed to happen. The only a question is when and how.

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@yahoo.com.

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.

The Wheel of Crisis

This tool helps planners face the unthinkable. The crisis team spins the wheel and then develops scenarios of how each crisis could occur and how two apparently random crises could be linked. Then the planners devise responses and risk-mitigation strategies.





At its best, the federal Health Insurance Portability and Accountability Act (HIPAA) gives health care payers a strategic plan for making much-needed improvements to administrative and clinical management systems.

HIPAA regulations protect the disclosure of all patient health information; the privacy compliance and code transaction testing deadlines went into effect April 14 and 16, respectively.

At its worst, HIPAA takes a big chunk from hospitals' IT budgets and those of health care providers that are trying to stay afloat as costs continue to soar.

At Blue Cross and Blue Shield (BCBS) of Minnesota, the emphasis is on creating business value from all the efforts and costs of bringing IT into compliance with HIPAA. In a nutshell, HIPAA requires systems and software to meet certain transaction and code-set standards and formats for electronically transferred patient billing and insurance information. CIO John Ounjian is leading an IT staff of 1,500 in a massive modernization of IT systems to improve services to consumers and health care providers. He recently spoke with Computerworld's Jean Consilvio about using HIPAA requirements as an opportunity to gain a business advantage.

Are you overhauling your existing claimsprocessing systems exclusively to meet HIPAA compliance? There's the element of compliance. To me, HIPAA is "Y3k" for the health care industry. It's costing 80% of what my Y2k [efforts] did. But with Y2k, we didn't have any opportunity to create value. With HIPAA, we have the opportunity to improve the system to meet compliance and modernize core systems.

What are the core systems affected by HIPAA compliance? The clearinghouse is the hub that processes the claims by receiving and routing them further into my operations or out to other payers. Once the claim is my claim, it goes through prejudication. That's where you make sure it has everything, like provider ID information, so you can accept it. It then moves to [the] claimspayment side of our business.

By law, if you do not have a clearinghouse, you cannot receive a claim that's not HIPAA-compliant, [because you do not have a way to reformat it so it meets the requirements]. The clearinghouse can receive a claim in any format [and] put it in HIPAA format, which is based on the ASC X12 standard, and then give it to my prejudication system.

AT A GLANCE

BCBS of Minnesota

- Provides health coverage to more than 2.4 million members.
- Offers members access to 96% of health care providers in Minnesota.
- In 2001, the not-for-profit_taxable company had total revenue of more than \$4 billion and paid more than \$20 million in taxes and assessments.
- Employs more than 3,800 people, including about 900 IT workers in claims operations and 600 people in IT.

One health care CIO views HIPAA as an opportunity to gain business value. By Jean Consilvio

people miss this simple point: Bank npliance

What happens if you get a claim that's not HIPAA-compliant? The payer can't receive any claim that's not HIPAAcompliant. If the health care provider sends the claim to any clearinghouse first, we can pay it.

So upgrading your clearinghouse is a strategic benefit for both you and health care providers? Yes. I'm not rejecting claims. The part that will help my provider save money is that instead of sending the claim to another clearinghouse, the provider can send it to me. I end up creating stronger relationships with

And what are the cost benefits for you?

Let's say I start improving my edits in prejudication. If I have my stronger edits at the front rather than the back [of that system], the claims go through with less cost because there are fewer exceptions or errors.

How has this affected your IT staff and help desk? Call me next year. I'm hoping we'll have less people and that HIPAA will reduce costs for us because we'll have fewer exceptions and more procedures that are standardized.

You filed an extension for the Standard Transaction and Code Sets. Does this affect your HIPAA clearinghouse initiative? The reason we did that - and that just about everyone else did, too - was because if I'm a payer and I didn't file an extension, then I couldn't receive claim files from all providers. By not filing for an extension. I wouldn't have been able to receive claims from someone who wasn't compliant. But we are ready to meet the October deadline.

Did you develop a cost-benefit analysis for achieving compliance? Yes, we have our own metrics we use to measure as we go through the project. We separate which costs are compliance and which are enhancements or modernizations.

It sounds like you view HIPAA as more of a cost-efficiency opportunity than an onerous requirement. Is that so? We think HIPAA is good for the industry. A lot of times checks have a microline that tells the bank your account number when processing a check. What if there were no

Missed

- Despite the April 14 deadline for privacy compliance, only 9% of providers and 5% of payers have completed
- Despite the transactions testing deadline of April 16, only 6% of providers and 11% of payers have completed transaction-remediation
- # 42% of providers haven't decided on their transactions testing strategies.
- 90% of respondents say their companies have applied for the transactions extension deadline in October.

BASE: 666 health care industry representatives (70% providers; 20% payers; 2% cleaninghouses; 8% vendors)

SOURCE U.S. HEALTH CARE INDUSTRY QUARTERLY HI COMPLIANCE SURVEY, WINTER 2003, HEALTHCARE INI MATION AND MANAGEMENT SYSTEMS SOCIETY CHICA WIND PHOENIX HEALTH SYSTEMS GALTHERSHIRE

standards for coding that number? Then you'd need coding routines. When it comes to [processing health] claims, they're submitted many ways. We need a routing [routine] for all points of submission. What HIPAA's saying is, "Knock it off. Everyone submit a claim a standard way." Remittance, eligibility, inquiry - it will improve the accuracy for all types of claims processing. You must do it the HIPAA way.

How strict are the privacy rules? HIPAA policies require that security and privacy are activated at the point where any access to information is attempted. You have to know the rules, especially on the privacy side. For example, for a daughter who's 12 years old, there's certain information that even mom and dad can't access. So under the law, I have to protect that 12-year-old. Privacy rules affect the desktops that customer service people use and Web self-service portals.

How are you training all BCBS employees on HIPAA rules? We just launched self-taught portal training for all company employees. It's part of human resources training for new employees, and all employees are tracked to make sure they complete the required training. After that, they can access HIPAA information [online] any time they need to brush up on the rules and

BRIEFS

Data Warehousing Efforts Fall Short

In a recent survey of 142 companies worldwide, 41% of respondents said their companies have experienced at least one data warehouse project failure, and only 15% of the respondents claimed that their data warehousing efforts to date "have been a major success."

The study, conducted by Arlington, Mass.-based Cutter Consortium, also found that just 18% of companies say they have obtained a "360-degree" view of their customer data - or the ability to access, integrate and analyze pertinent data across all of their most important customer channels.

HOW IS THE VALUE OF YOUR COMPANY'S IT INVESTMENTS MEASURED?

Decreased costs

Br) 506

Increased productivity

300

Project is running within a certain time

Total cost of ownership

56%

Increased revenues

Length of time to payback

Reduced head count

ROI formula or benchmark

Discounted cash flow

Other

11%

Don't know/refused

0.5%

IT value isn't measured

0.5%

Base: 200 IT leaders at companies with \$250 million to \$5 billion in annual revenue

SOURCE DELOITTE & TOUCHE LLP, NEW YORK AND IDG RESEARCH SERVICES GROUP.

BART PERKINS

Readying for A Trip Offshore

HE ECONOMY is forcing companies to examine every cost-cutting opportunity. As a result, offshore IT operations are becoming increasingly attractive. Drastically lower wages overseas make the business case compelling, and telecommunications improvements have finally made it viable.

Low-skill jobs have gone offshore for years, but higher-skill jobs are now moving to other countries.

Offshore estimates are staggering. Forrester Research is forecasting that by 2015, 3.3 million white-collar jobs — 472.632 of them in IT

— 472,632 of them in IT and mathematics — will shift from the U.S. to countries with lower labor costs, taking almost \$136 billion in wages with them.

Even domestic IT outsourcers are being forced to go offshore. Historically, they have resisted, because lower wage structures result in lower revenues. But Electronic Data Systems, Accenture, Affiliated Computer Services and others

now have offshore facilities and are recruiting heavily in India.

Microsoft is moving some Windows development to India. Other current offshore outsourcing efforts span diverse industries, going well beyond IT:

- Massachusetts General Hospital has some of its CT scans read by Indian radiologists.
- Fluor Corp. employs 1,200 offshore draftsmen and engineers to develop blueprints for industrial facilities.
- Indian and Chinese engineers design chip circuits for Intel and Texas Instruments.
- Proctor & Gamble has 650 employees in Manila helping prepare worldwide tax returns.



Russian engineers are designing luggage bins for the Boeing 777 airplane.

Other industries are leading the way offshore. but IT is catching up fast. I conducted an informal survev of 400 IT leaders at the Computerworld Premier 100 conference in February. Currently, 72% of those leaders' companies aren't involved in any offshore development or maintenance. However, most said their companies plan to make the offshore leap soon; less than half will still be uninvolved in

two years. By 2005, approximately one out of every 10 of the companies that send IT work offshore will spend more than 25% of their development and maintenance budgets offshore. In fact, one CIO told me that he'll have 70% of his development and maintenance staff offshore in three years.

Start planning now. Before your CEO asks, look at the following issues:

- Determine if offshore is appropriate for your company. Some organizations can't go offshore for security reasons.
- Define the scope. Common candidates for moving offshore are call centers, application development, application maintenance and infrastructure. Some jobs, especially those requiring

lots of face-to-face interaction, are difficult to move offshore.

- Understand the trade-offs of various offshore locations. The leading IT locations (primarily India, Ireland and the Philippines) have highly educated workers who speak English well, and they try to minimize difficulties like time-zone differences. Newer entrants (including Pakistan, China, Russia and Brazil) offer even lower prices but have weaker infrastructures and more difficulties with language and time zones.
- Determine whether you want to build your own offshore IT facility. Large multinational corporations with an established presence in a lower-cost country may decide to build their own. Smaller companies or those without operations in a low-cost country are generally better served by contracting with a third-party offshore outsourcer.
- Select an outsourcer with both onshore and offshore capabilities. Companies that have a U.S. sales presence but do all the work offshore offer the lowest prices. Pay a little more and use an outsourcer that does some work in the U.S. and some offshore. Specify which work is to be performed in each location. Such an arrangement reduces risk but still offers considerable savings.
- Be realistic about the savings. Between 30% and 40% is realistic, vs. the 70% claimed by some offshore suppliers. While wages are lower, you will incur additional supplier management, communications and travel costs.

Offshore sourcing alternatives are becoming more attractive, more viable and more prevalent. As you proceed, consider the same issues you would address in any outsourcing decision. Then determine how to best leverage offshore operations to reduce costs — before your CEO demands it. •

LOOK BEFORE YOU LEAP

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IT Careers in Security

It sounds so easy ... point and click, security. The reality is that requirements for improved information security become more complex on a daily basis – from protecting consumer information to securing the nation's IT infrastructure. As the need for more advanced technology increases, so does the need to be able to identify, hire and keep people qualified to work in the world of IT and IT security.

iane Morrell, vice president/director of research for the Gartner Group in Stamford, CT, says that employers are conducting a more thorough assessment of people to work in IT security. That's good news for IT professionals who have a track record for accomplishment, for remaining with a company for a reasonable amount of time and who have proven their ability to apply technology to entirely new situations. Not so much for people who have been jobhoppers and whose background would be difficult to track, much less qualify, for appropriate security clearances. "The assessment of people is receiving more scrutiny and is more acute than in the past," says Morrell.

Gartner Group's research indicates that there will be renewed focus on how government agencies, the military and corporations outsource basic transaction work in the IT arena. The cost has been driven down by outsourcing, an economic factor that has to play into the equation of how networks and systems are developed and how companies establish security criteria for their suppliers.

Morrell says the change in national security focus has speeded up the need to transition the national workforce to meet cost restraints and security. The result is a higher-level skill set for IT professionals here in the U.S. Traditionally, U.S. companies measure performance by demonstrable skills. Gartner Group predicts this will change. "It's

the ability to synthesize knowledge versus academic training." Morrell explained. "The demand will be for an IT workforce that can design around and in between organizations, that is intuitive, that is fluent in skills and that can apply knowledge to entirely new spaces. You'll see a greater demand for higher order thinking to apply to research and development, nanotechnologies, biotechnologies – with the question of national security mixed in."

Hiring employers can't merely recruit or wait for resumes to cross the portal in this new paradigm. According to Morrell, successful hiring companies will constantly mine the IT workforce to identify those who have the sought-after competencies. "I think we'll see a lot of focus by companies on keeping their critical talent satisfied and with identifying new talent through their current employees. That puts an entirely new light on the company/employee relationship."

IT Careers

For information on recruitment advertising, Please contact: Nancy J. Percival, Director, Recruitment Advertising, at 800-762-2977 500 Old Connecticut Path Framingham, MA 01701 Produced by Carole R. Hedden

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Systems Analysts (Integrator)
(Code #200302), System Analysts
(TAL) (Code #200303), Senior
Systems Analysts (Code #200304)
and Software Engineers (Code
#200304)

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Vexcel Corporation seeks Software Engineer is work in Boulder, CO. Position requires master's degree in Electrical and Computer Engineering, as well as working knowledge of research, design and development of spectral estimation and other processing algorithms for potential processing algorithms for a potential potential potential processing algorithms for a potential potential potential potential potential potential potential programming language C++. Send resumes by mail only to Susan Burke, Vocaci Burke, Burke, Burke, Burke, Burke, Bur

ABAP Developer wanted to pargramming, maintenance, & enhancement of SAP HR Payroll apps, using ABAP pro gramming language; collaborat w/ users, ITS staff 8 other stakeholders to identify use regts., assess avail, technological gies & s; apply a broad knowl edge of various tech. function to understand the procedure:

E expected system perf. asso it expected system peri, asso-ciated withe intro, of SAP sys-tem changes & upgrades assess objectives for assigned project phases; & recommend tech, strategies & tactics to satisfy business needs & ensur on-time product delivery. Must have Bach, deg, in Comp. Sci., Elect. or Electronic Eng. or related field, & 3 yrs. exper. in SAF ed field, il. 3 yrs. exper. in SAP, incl. design, develop, installation is modification using ABAP incl. exper. in SAP/IHR Payroll applications, ABAP/4 Reporting, SAP-Script, Batch Data Communications is BAPIs. AU/hr/wk. \$93,000/yr. Send 2 psisimas to Case#200201216. abor Exch Exchange Office, 19 rd St., st Fl., Boston, MA

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Chemistry & Industrial Hygiene, Inc. seeks applicants for the position of Programmer Analysi in Wheatridger, CO tie engage in moderately complex tunks in a number of computer and software related areas. Requirements for the position include having a bachelot's degree in computer science, include a having a bachelot's degree in computer science, include having a bachelot's degree in computer science, and include having a bachelot science, include

Senior Software Engineer Design, implement and test dati ommunication products. Work n C. C++ and Assembly to help deliver communication products to the company and customers. Design and develop low level system drivers for communicaon with TCP/IP stack and other etworking layers. Design an evelop test suites to activel and passively monitor vari ous survices enabling real-time, pervasive and flexible monitor-ing of the IP network. Perform development using expertise in TCP/IP, RTP/RTCP, SIP, Radius, DNS, HTTP, SMTP, POP3, IMAP and various other P based protocols. Perform evelopment and debugging or ower PC based architectures nclude a Bachelor's degree of an Engineering discipline or related field and four years of vork experience in related fiel software development ad authorization to work in the United States. Salary \$83,960/year. 40 hours/wk Respond with two copies of esume to Case #200200499. Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA

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MIS/Programmer Analyst wanted by Driktech, LLC, a small fast growing company. Candidates must have minimum bacheds degree with exp. in 1T project management and sales. Attractive wage with full benefits. Please contact 1850 Timber Trail, Ann Arbor, MI 48103. EOE.

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MARA CONSULTING, INC., a California-based Corporation, has California-based Corporation, has California-based Corporation, and the California c

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Design provide specifications and implement software for optimizing URIX and Windows NT systems connected to company systems connected to company.
Develop and test collectors, agents and programming inherfaces to APIs, operating systems, and relational distabases. Use variety of languages such as C/C++, SCO, JOBC and Java. Requirements include a Bachelor's degree or equivalent in Computer Science, an Engineering discipline or installatified and at least five years of progressively responsible work experiences in the job offered or included and the serviced sufficiency in the progressively responsible work experiences at sufficiency and the progressively consideration to work in the United States. Salery \$105,000/year. 40 hours/wk. Respond with the vo copies of resume to Case #200200859, Labor Exchange Office. 19 Staniford St., 1sf Fl., Boston, MA 2114.

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Programmer Analyst, 40-hr wit, 8 - 4-PM, Bachelo's er foreign degree equiv in Computer Seisman or Computer Seisman or Computer Eng. or Electrical Engg. + 2 yrs exp. in job offered ar 2 years as Systems Analyst, Analyst, reviews and rewrite programs; prepare records and reprotis; consult with staff and serues to identify operating procedure problems; formulate and review plans regarding steps required to develop programs; devise flow charts and diagrams; modify programs. Resume to Dianna-Andrea Corp., 4210 NW 4 St., Marn, Ft. Sa125.

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Technology Support Manager - for non-profit organization to manage and implement all internal IT solutions including network support, troubleshooting, and internal helipdesis, for Windows 2000, XP, and Exchange Server environments. Postition requires degree or experience. Send cover letter and resume (no calls) to A. Marano, NPower NY, 145 W. 30th St., 8th Fl, NY, NY 10001.

Programmers with advanced technical skills to program interrelated business operations and merchandising applications. Skills to include ERD, DSD and dataflow diagramming. Send resume to Human Resources. Attn: SL, Req #333, Cleveland Indians, P.O. Box 94954. Cleveland, OH 44101-4984. EOE.

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Seeking qualified applicants for the following positions in Memphial Collevelle, The Senior Programma. Analysis, Formulate Joffmanna. Analysis, Formulate Joffmanna. Analysis, Formulate Joffmanna. Analysis, Formulate Joffmanna. Requirements: Bachelor's degree' in computer solence, Missis, information technology, engineer-experience in systemis applications development. Experience with Java. ether C. or C+; and development of transactional distributed systemisepplications also required. Java. ether C. or C+; and development of transactional distributed systemisepplications also required. Fig. 1997. The Computer Service of the Services, 1909. Summit Tower Brid. Sciences, 1909. Summit Tower Brid. Suite 1400. Offendo, P. 2591. SCB Method. P. 2591. SCB Method.

Programmer Analyst, Wilmington, Deb. Bachelson in Comp. or Electronics or MIS + one year exp. in design, develop & implement net enabled applications utilizing Java, HTML, XML, Javar/RML, CORBA, EJB, ASPUSP, C, SCL, and PU/SCL, and do OOP using C++ and C. if for Windows SSROMPT & LUIK, design OUL using C++ and C in for Windows SSROMPT & LUIK, design OUL using A develop (PARSS using) Cracked, Scl. Server, MS Access, EM2 and personal programs of the Comp. Form Sci. Reports 2.5. Respond to HR Dept. Neederb Solutions Inc., 1170 Broadway, Suite 314, New York, NY 10001.

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ymans of application systems design experience using Visual Basic and SQL. Servers; Send resume to: Recruiter - Human Resources. AgFirst Farm Credit Bank, P.O. Box 1499, Columbia, SC 29202. (Nc Phone Calls Please).

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have design, analysis, and model-ing capabilities of business requirements using UML and RUP Capable of interfacing with market

ing and customer care groups Data Mining, Statistics, Trend

capabilities. Database knowledge DB/2, Oracle, MySQL, or Sybase Object oriented design and pro gramming required. Should have

Master's Degree in Comput

at least 2 years experience. Send to NY Recruiter at carears

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Engineering discipline at related field. No work experience required. Requires 70-75% domestic/international travel. Applicants must have unrestricted authorization is work in the United States. Salary: \$85,000/year. 40 hours/wk. Respond with two copies of resume to Case #200201020.

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Systems Analyst: Design, develop and implement software systems, incl. telephony, radio and satellite. Use expertise in C SNMPC, GSM system, etc. 2 yrs exp. in job off'd or 2 yrs exp. in related pos. w/same duties & BS in Enng, Comp. Sci. or related. EOE. Contact: SP Software Solutions, Inc. 12320 Clairmonte Ave. Alpharetta, GA 30004.

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provide tech assistance to end users; write prym & job stream documentation. B.S. Comp. Sci., MIS or rel. field + 2 yrs exp. as siware engr or similar duties under different job title, 2 yrs exp w/configuring & prym gusing Tempest Messaging System & dvipg siware in CMM level 3 (CPTeOCC++Cft. VB6, ActiveX. COM. MFC, NET Framework, & UML. Exp. w/following dylor

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Windows

Life Insurance Co. in London, Ontario. "We will also skip upgrades if there's no immediate need or benefit."

Many IT managers, however, expressed keen interest in some of the new features in Windows Server 2003, particularly the improvements to Active Directory (see box), and some said they will start migrating this year.

James Hudson, director of IT worldwide at J. Walter Thompson Co. in New York, said he expects the advertising agency to move to the new operating system in three to six months because of the added stability of Active Directory. The company is currently running a mix of Windows NT and 2000 and Novell Inc.'s NetWare.

Hudson said the efficiency designed into the replication topology of Active Directory will be important, since his company has a large global Active Directory deployment distributed across several offices. "Having greater control in how we manage replication across WAN links with bandwidth constraints will allow us to efficiently schedule replication intervals," Hudson said.

Early Adopter

Andre Mendes, CIO at Public Broadcasting Service (PBS) in Alexandria, Va., said his company's migration within the next six months will be driven by new Active Directory and Exchange 2003 features, improved security and the shadow-copy feature for creating backup copies of files or folders to prevent inadvertent loss of data.

Mendes said PBS has been

NEXT WEEK

Four early adopters discuss their experiences with Windows Server 2003. See the Technology Section in next week's issue.

testing Windows Server 2003 for a few months and has been satisfied with its new features and stability. Plans call for a near-immediate migration of domain controllers and Active Directory. Others systems will follow within six months, as PBS moves off Windows 2000 and Sun Microsystems Inc.'s Solaris operating system, Mendes said.

But PBS hardly represents the norm, according to Gartner Inc. Analyst Tom Bittman said he expects only about 5% of Windows 2000 users to move by year's end, with another 15% to follow by the end of 2004.

Bittman also predicted that companies still using Windows NT 4.0 won't rush to upgrade either, despite a 2004 end-of-support deadline. Those companies tend to be conservative by nature, he

Active Directory

- a Cross forest trust
- s Domain rename s Schome redefine

said, adding that he doesn't expect more than 25% to 33% of the existing NT base to migrate to Windows Server 2003 by the end of next year.

"Nobody is making any kind of IT purchases unless they have a good business case," said Dwight Davis, an analyst at Summit Strategies Inc. in Boston. "People are not going to be looking at Windows

Server 2003 purely in technical terms."

Jim Hebert, general manager of Windows enterprise servers at Microsoft, said the company is well aware that IT spending is flat and probably will be next year as well. So Microsoft will focus on trying to help customers understand the benefits they might see from an upgrade, he said.

One popular theme is server consolidation, a benefit that Steve Sommer, CIO at Hughes Hubbard & Reed LLP, said he hopes to achieve with an upgrade that may start as early as the fourth quarter. The New York-based law firm now has a mix of Windows NT and 2000.

Other migration drivers for Hughes Hubbard include the impending end of support for NT and the company's huge licensing and support agreements with Microsoft, which

make "it a shame if you don't do some upgrading," since the new software is already paid for, Sommer said.

Even so, some companies may resist making a quick move because of the labor costs and disruption associated with a server migration. Others simply don't like to test Microsoft software until the bugs get worked out in the first service pack.

Raymond Leitz, director of technical services at Auto-Nation Inc. in Fort Lauderdale, Fla., said his company prefers a six- to nine-month "cooling period" before considering new Microsoft server software.

REBRANDING

Microsoft drops ".Net" from its server product line and rebrands it "Windows Server System":

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Visual Studio .Net 2003 Also Slated for Launch

The much-ballyhooed launch of Windows Server 2003 this week is overshadowing the simultaneous release of a new version of Microsoft's Visual Studio .Net development environment.

Even Microsoft acknowledged that the tool is largely an incremental upgrade to Visual Studio .Net 2002. What's more important is the delivery of the development environment in tandem with the new server operating system, which has the .Net Framework built into it for the first time, said David Lazar, Microsoft's director of Visual Studio product management.

"We think it's absolutely essential," said Jerry Hale, CIO at Eastman Chemical Co. in Kings-

In the past, developers had to add the .Net Framework to the operating system. Both Visual Studio and Windows Server

2003 will feature the new Version 1.1 of the Net Framework, which consists of the Common Language Runtime and a unified set of class libraries, including ASP.Net for Web applications and Web services, and ActiveX Data Obiects (ADO) for data access.

"Having seen it run, it's going to be a lot faster, and it has richer integration with the operating system," said Kevin Rice, an enterprise architect at Allstate Financial, a business unit of The Allstate Corp. in Northbrook, III.

Also setting the new tool apart from its predecessor for Allstate will be the ADO.Net data access capabilities for Oracle databases. The first version of Visual Studio .Net had those components only for Microsoft's SQL Server, Rice said.

Rice is also anxious to use the Enterprise Instrumentation Framework, which he said will help Allstate collect information about application performance, errors and usage. "In the past, instrumenting code usually involved a great deal of external work, and you always took a performance hit," he said.

Other new features Alistate expects to use include the .Net Compact Framework for building applications for wireless devices, enhanced Web services support and code obfuscation, which will help prevent outsiders from reverseengineering code, Rice said.

Hale said the biggest plus for Eastman Chemical will be the improved migration tools to assist his company's move from Visual Basic (VB) 6.0, since those tools weren't very helpful in Visual Stu-

NEW FEATURES

.Net Framework Version 1.1

.Net Compact Framework for handheld devices

Enhanced upgrade wizard

Managed data provider for cting to Oracle databa

SOURCE: MICROSOFT CORP

dio .Net 2002. Hale said Eastman selected the .Net development platform for its next-generation service-oriented architecture.

But plenty of corporate developers said they either haven't moved or are just starting to shift to Visual Studio .Net 2002, which Microsoft released 14 months ago. The tool was the first to incorporate the .Net Framework, with its thousands of class libraries, and it presented a huge change for users of prior Microsoft tools.

"We will take our organization there when we get a development need for it and the funding to have proper training," said Carrie Howard, IT project coordinator for Washoe County in Nevada. She said the county's developers know VB 6.0 well.

John Rymer, an analyst at Cambridge, Mass.-based Forrester Research Inc., said the 2003 version should accelerate adoption of the .Net Framework and ASP.Net, especially for developers of portal, Web and front-office applications.

- Carol Sliwa

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FRANK HAYES • FRANKLY SPEAKING

Secure Your Users

T THE RSA SECURITY CONFERENCE last week in San Francisco, the big news was a new set of cybersecurity best practices, a new application vulnerability description language and a push for Web services security, along with the usual collection of new IT security products (see story, page 8). Considering what a messy, continuously changing security picture we face, it's all worth digging through when you get the chance. Piling more security technology onto your networks and servers and desktop PCs is usually a useful thing.

But while you're upgrading your security technology, don't forget to upgrade security in your users, too.

Not for your users. In them.

Look, you've got firewalls and virus filters and intrusion-detection systems. You scan logs and tune settings. You go hunting on a regular basis for unauthorized wireless gateways and off-the-network modems. You've built a security fortress, and as long as your users are inside that fortress, they're pretty safe.

But they won't stay inside that fortress. Inexpensive technology lets office workers take the office with them wherever they go — or at least it seems that way. Maybe it makes them more productive, but it also exposes all that office activity to the world outside the protections of their real office.

Cheap wireless access points make home networking easy. But they can also expose access to your networks and data if an office worker connects from home while still hooked up to his wireless network.

Cell phones make it easy for outsiders to eavesdrop on business conversations. Laptops with big, clear screens make it easy for people even a few seats away to read confidential doc-

uments. An enterprising snoop can even copy hundreds of megabytes of information from a laptop with a CD burner left running on an airplane seat while its owner waits in line for the lavatory.

Laptops are thief bait in airports, parked cars and even overhead bins in airplanes, and they're typically stuffed with confidential business information. But so are handheld computers, which can easily hold documents, spreadsheets and databases these days — and are much easier to steal than laptops.

And that's just the tip of the iceberg. There are endless ways users can compromise the security of business information once they're outside the office, and there's not much you can do about most of them. They're outside your security perimeter — beyond your reach.

Yes, you can add more security technology. You can try to chase down and block off every security hole in each user's portable office.

But none of that will be as effective as improving the security in the user.

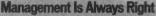
Because in the end, security is a set of disciplines practiced by users, not just a set of technologies implemented by IT. Security awareness, good habits and common sense on the part of users won't replace firewalls and intrusion detection. But the technology alone won't be much use without security-smart users.

So, what can you do to upgrade your users' security? These days, you don't have the budget to send them to security classes. But you can send them reminders to be security conscious. Point out specific risks of wireless hubs,

laptops, handhelds and other technologies outside the office. Make specific suggestions for avoiding those risks. And offer help if users have questions or problems.

And when they do call for help, don't just tell them, "No, don't do that!" Work with them. Look for options and alternatives. Find solutions that you and they can live — and work — with.

Build real security into your users. Then you'll find out just how useful all that security technology can be.



Circa 1991, the boss wants to review the code for a Fortran program this pilot fish has written. Fish is proud of his carefully structured code that splits his main routine, major modules and subroutine groups into a dozen separate files. But when his boss sees the stack of 12 printouts, he says, "What's this?" "He was expecting all the code to be in one file," says fish glurnly. I received a negative review for my poor software maintenance habits."

Workaround Tech support pilot fish at this

opier company in Eu-

onts in the course of ployment," fish says.

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slate menu option

and compare them to the English version."

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SHARK TANK reast when power goes down. That protects the

of multiple outages. "To secure the room, they installed an electronic doadhoft," says pilot fis working there. "The installer was told to plug the lock's power supply into the power controlle – behind the locked door." And when does amyone finally notice a problem with this soup. "The first time there was a power outage."

What a Concept tired general m ick as a consulta when two fouding oper ns VPs can't de They've gotten autho ters for fish to be in charge again until things are straightened out. At their first meeting, fish tells them, "You guys are getting paid big bucks to run this joint. If I come out of retirement, the first thing I will do is fire both of you. Now, do you still want me to come hack and be the boss? Says fish, "I never heard another word. They decided to cooperate,

Zipping Along
When a large file arrives
at this government
office, 4's compressed,
says a pilot fish who
works there. "Our secretary came back looking
for a Zip drive," fish
reports. He uses a filecompression program to
open and save the file
for her. "My supervisor,
not warning to have the
problem again, had Zip
drives installed on three
of the computers," he
says. "But not mine,
since I didn't need it."

LOCKCOWTI
New computer room has
its own power controller,
which must be manually
to be king of the hill."

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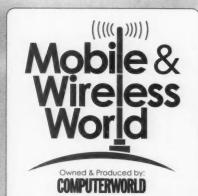


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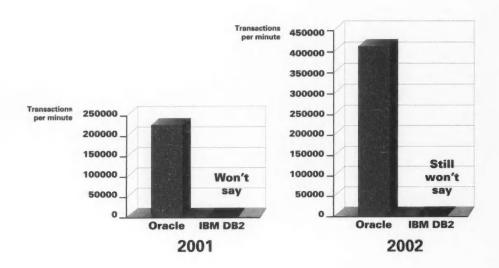
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Still What's the fastest database on IBM's fastest computer



When IBM wanted to show off their fastest computer, IBM chose Oracle. Again.



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